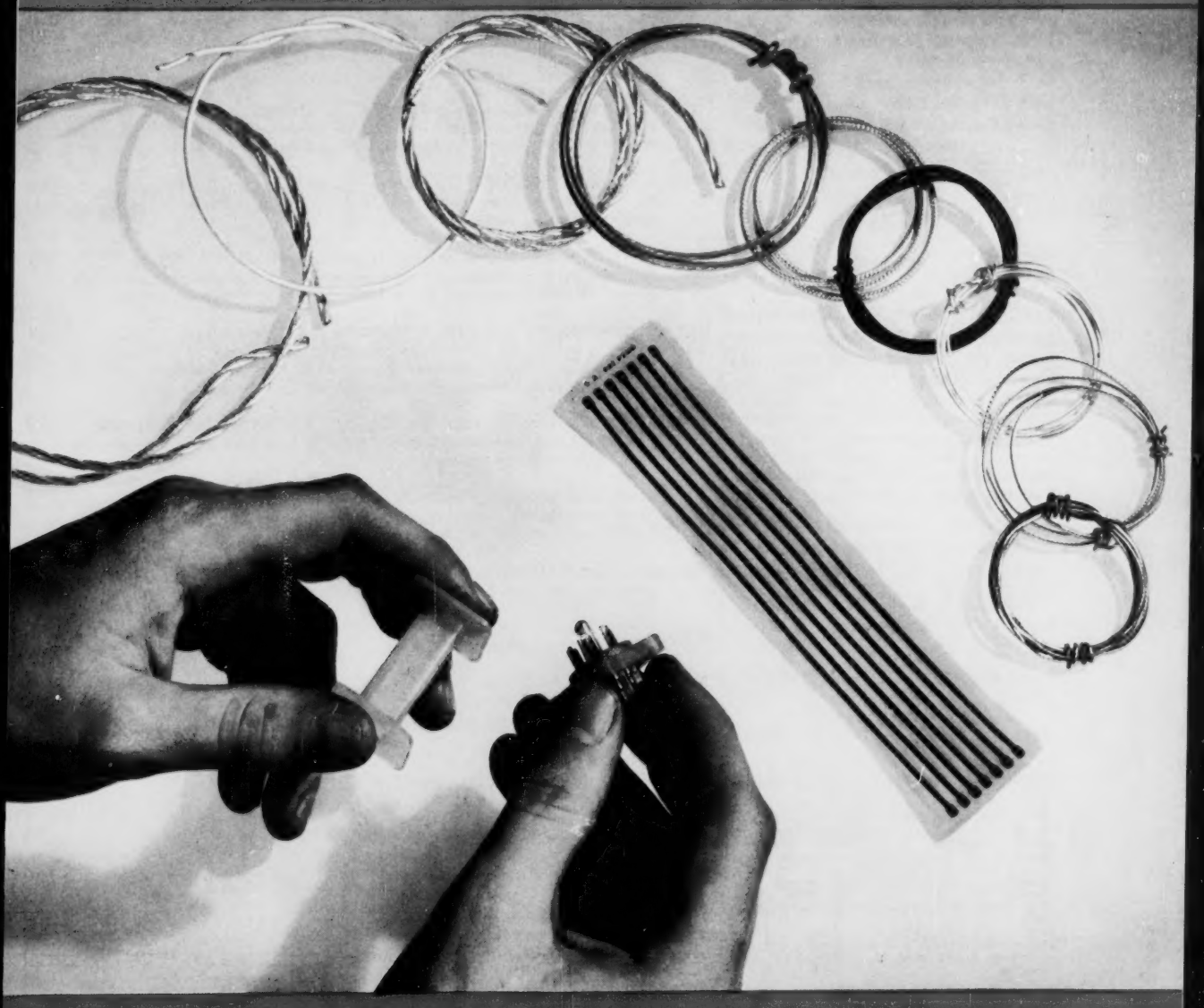
THE MAGAZINE OF

Standards



. . . new horizons for the plastics industry — page 40

FEBRUARY 1959

THE MAGAZINE OF

Standards

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

VOL. 30 FEBRUARY, 1959 No. 2

ASA

Our Cover

Example of the rapid changes in the plastics industry, these products are a few of the different forms which can be melt-processed from a recently developed perfluorocarbon resin. The picture shows coil forms, tube sockets (foreground), and wire insulation. As in the case of tetrafluoroethylene resins, the new resin weathers well, and has a low coefficient of friction.

To provide a basis for checking performance of plastics, international work on tests is progressing rapidly (see page 40).

Photo—E. I. du Pont de Nemours & Co.

ASA

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This publication is indexed in the Engineering Index and the Industrial Arts Index.

FEATURES

NEWS

DEPARTMENTS

. . . . marginal notes

• RAIMONDO BOREA was the photographer who covered the Ninth National Conference on Standards for THE MAGAZINE OF STANDARDS (see the January 1959 issue). With his two cameras, one flash and the other for very fast film using natural light, Mr Borea managed to take pictures of all the speakers, even during concurrent sessions. His pleasant manner and friendly smile won the cooperation of all.

• William H. Offenhauser, Jr, author of "How to Find That Missing Fact" (MAG OF STDS, Dec, 1958, p 358) tells us that he has discovered a fact he did not know at the time the article was published. Footnote 2 of his article refers to an "unpublished memorandum" by Dr Walter J. Albersheim. Mr Offenhauser now finds that the quotation to which the footnote refers was published in an article on "Thinking Machines" in the March 1958 issue of **"Rosicrucian Digest."**

• All new and revised American Standards issued during the past year will be listed in the 1959 Price List of American Standards to be published as Part 2 of the March issue of THE MAGAZINE OF STANDARDS.

• All who are interested in standards are invited to the Company Member Conference Spring Meeting at The President Hotel, Kansas City, Missouri, May 6 and 7.

• If you want to keep copies of THE MAGAZINE OF STANDARDS for reference and don't want to use valuable shelf space, you can get microfilm copies from University Microfilms, 313 North Frst Street, Ann Arbor, Michigan. Microfilm of each volume since 1950 is available.

PLAN NOW

Tenth National Conference on Standards

The Sheraton-Cadillac Hotel

Detroit, Michigan

October 20-22, 1959

Technical and discussion sessions of special interest to standards executives in industry and government.

This Month's Standards Personality

DR WILLIAM P. YANT, statesman in the safety field, emphasizes the importance of research as the basis on which to build sound standards and safety practices. Conversely, standardization, he believes, is the basic method for translating the information obtained through research into the sound, practical, engineering data that make standards pay off for industry in consistently good safety records. Dr Yant is director of research and development for the Mine Safety Appliances Company, Pittsburgh. He holds 36 patents dealing with gas testing devices and devices for respiratory protection.

He does not stop with success in research, however. His active participation in committees of the National Safety Council and the American Standards Association, as well as in many national safety associations, has made him an instrument through which he helps to put his philosophy into effect in the nation-wide safety programs of which he is such an important part.

Dr Yant has just been elected as vice-chairman of ASA's Safety Standards Board. He has been a member since 1944.

Dr Yant first was active in ASA work in development of the 1930 edition of the American Standard Safety Code for Identification of Gas-Mask Canisters. He is an important figure in the work on American Standard permissible concentrations of toxic dusts and gases, and served as chairman of this ASA committee, Z37, from 1941 to 1956. He also served for many years as a member of the committee on protection of heads, eyes, and respiratory organs.

Dr Yant has not hesitated to give his time and abilities in many ways to the country's safety effort. He was chairman of the Research Committee of the President's Conference on Industrial Safety for five years, and co-chairman of the Equipment Panel of the U. S. Conference on Air Pollution in 1950. He received the Pittsburgh Award for service to chemistry in 1946. He was chairman of the Industrial Hygiene Section of the American Society of Safety Engineers, and later president of the Society. He has also served as president of the American Industrial Hygiene Association. He is now trustee of the Industrial Hygiene Foundation of America, Inc.

In the National Safety Council he has helped make nation-wide safety policy as a member of the board of directors, as vice-president for industry, and also as chairman of the industrial conference, and of the policy committee. He has been called upon to share his knowledge and experience with many organizations, as a member of the advisory committee on industrial hygiene, U.S. Public Health Service; the advisory committee to the Yale Institute of Occupational Medicine and Hygiene; and the Institute of Industrial Medicine, the N. Y. University College of Medicine, and the National Fire Protection Association's Committee on Vaporizing Liquids.

Last year Dr Yant's outstanding work on behalf of industrial safety was recognized when he received the Arthur Williams Memorial Medal from the American Museum of Safety "for his years of service to others."

by FULTON R. MAGILL

THE CASE FOR A DECENTRALIZED

STANDARDIZING fastening and assembly techniques in the manufacture of 25,000 different models and sizes of products in Rockwell Manufacturing Company offers great opportunities for savings. But because no product is made in more than one plant, company-wide standardization must start at the plant level. That's why Rockwell has emphasized decentralization in its standardization efforts.

TANDARDIZATION PROGRAM

FINDING THE TREMENDOUS SAVINGS available through standardization of materials, parts, and practices in a diverse, decentralized company such as Rockwell Manufacturing Company requires a decentralized effort. This is just as true as that an effective industrial relations or industrial engineering program requires decentralization. Rockwell manufactures 19 product lines of 125 different products (25,000 models and sizes) for 28 markets in 21 widely separated plants. Potential savings through standardization seem almost unlimited in such an organization.

There is no question but that any sizeable company can profit from a central standards department. Rockwell has saved thousands of dollars in recent years with a central department while, at the same time, laying the ground work for a decentralized effort. The program has now reached the point where it is possible to chart its future direction.

Mandatory standards developed in company headquarters and disseminated to line executives throughout operating divisions usually do not work well. There are too many variables from plant to plant. On the other hand, getting acceptance of voluntary standards is a time-consuming, and therefore, expensive procedure.

Decentralized Staff

The solution of this dilemma is a decentralized staff with a representative in every plant where potential savings will justify a standards engineer's services. Rockwell took the first step toward such an organization in 1956, when it formed a central standards department and gave specific responsibility for division standardization to one individual, usually the chief engineer at each plant. It has now appointed its first full-time plant standards application engineer at one of its larger plants.

At Rockwell, there have been no mandatory standards. Each standard issued from headquarters has been developed from data submitted by operating units for acceptance or rejection by the company as a whole.

The success of this decentralization was evidenced in the experience of two power tool divisions. As described in the March 1958 issue of THE MAGAZINE OF STANDARDS,[1] these divisions reduced the cost of 72 percent of the hexagon nuts used on existing products.

One of the meter divisions also had a similar experience in applying standards to hexagon nuts used on existing products. Of 63 types of nuts investigated, 12 types were to be deleted, 16 types were to have materials changed, and 14 types were to have design changes or substitutions.

Where such savings are possible without a standards specialist on the plant staff, why consider hiring one?

The answer lies in the fact that standards are best created at plant level. Their creation requires time and a degree of specialization. Design engineers and both manufacturing and purchasing executives are concerned with specialized problems in producing the highest quality products at the lowest practicable cost. A standards engineer, however, has an over-all responsibility — the establishment and application of standards that satisfy everyone. He works with the engineering, manufacturing, and purchasing departments, sometimes through a plant committee. His responsibility is to see that each new standard is consistent with quality requirements and will actually save the division money. A standards engineer provides the initiative, collects the specialized knowledge, and does much of the detailed work on which standards are made.

Role of Central Standards Department

The Central Standards Department helps the plants organize their standards work and also maintains relationship between Rockwell and the national standards organizations, such as the American Standards Association — keeping up with the field, in other words. The main function of the Central Department is, however, to coordinate and correlate the standards work done in individual plants where products are designed and manufactured.

Role of a Plant Standards Engineer

More precisely, what is the role of a standards engineer at the plant level? First of all, he must educate plant executives in the objectives of standards. He must

MR MAGILL is manager of the Central Standards Department, Rockwell Manufacturing Company, a company member of the American Standards Association.

[1] "How to Squeeze Out Extra Profits," by Fulton R. Magill, THE MAGAZINE OF STANDARDS, March 1958, page 70.

show the engineer, the purchasing agent, and production men how standards can cut costs without lowering quality. Secondly, he is on the spot to observe applications in which standards will pay off. He can examine first-hand practices for specifying materials, engineering design, and drafting methods, and the procurement of parts and ingredients.

The plant standards application engineer does work that could not be done by the Central Standards Department. In fact, he spends a great deal of time reviewing standards formulated and suggested by the central department to ascertain their local applicability. His recommendations are essential to the central department, as well as to the plant, in the formulation of what may eventually become company-wide standards.

Functions Defined

By carefully spelling out the function of both the Central Standards Department and the plant standards application engineer, Rockwell expects to eliminate possibilities of sloppy teamwork between divisions and between plants and headquarters. Under the decentralized program, Rockwell emphasizes the importance of an organized effort, rather than the structure of the organization itself, to accomplish standardization in a planned, orderly, and profitable manner.

Rockwell is convinced that there is plenty of money to be saved through standardization, although the exact sum is impossible to predict. Just as a decentralized organization, aided by a headquarters staff, have proven successful in Rockwell's industrial engineering programs, the company anticipates that a decentralized approach is the best way to uncover the money available in standardization.

The investment in the services of full-time or part-time standards men in its plant, the company believes, will verify its decision to emphasize the importance of standardization in operating divisions.

The trend toward decentralization at Rockwell is another indication of the maturing of the standards engineering profession. American industry, even among smaller enterprises, is hastening its realization that management cannot depend upon haphazard efforts to reap standardization benefits. Like every other significant development in management methods, standardization requires an organization and specialists.

BENEFITS of standardization to Rockwell are accumulative. When standard parts are specified on the drawing board, savings are gained throughout the market life of the product. Drafting techniques themselves are also standardized so that one plant may use another's engineering without difficulty.

Charles W. Bryan, Jr

T. T. Miller

NEW MEMBERS OF ASA BOARD

CHARLES W. BRYAN, JR, vice-president, Pullman, Incorporated, and T. T. Miller, president, Polymer Chemical Division, W. R. Grace & Company, became members of the Board of Directors of the American Standards Association in January, 1959. Mr Bryan was nominated by the American Society of Civil Engineers and Mr Miller by the Society of the Plastics Industry, Incorporated.

Re-elected members of the Board are E. R. Johnson, vice-president—operations, Republic Steel Corporation; W. J. Sweeney, vice-president, Esso Research and Engineering Company; and A. E. Pringle II, vice-president, The Pringle Electrical Manufacturing Company.

Harry E. Chesebrough, vice-president and general manager, Plymouth Division, Chrysler Corporation, is now a director through nomination of the Society of Automotive Engineers. He was formerly a director by nomination of the Automobile Manufacturers Association.

Mr Bryan, new member who served as a member of the Board a number of years ago, then also as a nominee of the American Society of Civil Engineers. He is a past president of the Pullman-Standard Car Manufacturing Company. Mr Bryan has been active in the Society of Terminal Engineers, having been the Society's president. He is a past chairman of the Metropolitan Section of the American Welding Society, and has served as a director of the American Society of Civil Engineers. He is active in the affairs of the Society of Naval Architects and Marine Engineers.

Mr Miller was named president of the Polymer Chemicals Division in 1956 when the division was formed to oversee operations of a new 50-million pound polyethylene plant constructed in Baton Rouge, La. He had worked with Dewey and Almy Chemical Company, which in 1954 merged with W. R. Grace & Company, since 1922. His experience has included service as European sales manager as well as vice-president in charge of sales, vice-president of marketing, and as vice-president of the Organic Chemicals Division. Mr Miller has a B.S. degree in Engineering Administration from the Massachusetts Institute of Technology. He is a member of the American Chemical Society, American Marketing Association, American Management Association (vice-president in charge of marketing since 1957), Commercial Chemical Development Association, and the Institute of Food Technologists. Since 1956 he has been a member of the M.I.T. Corporation. His directorships include Boston Fund, Inc. and Middlesex Products Company, Cambridge, Mass.

PHOTOS—EASTMAN CHEMICAL PRODUCTS, INC

NEW HORIZONS FOR PLASTICS INDUSTRY

by C. H. ADAMS

AN ACTION of major significance to the plastics industry in the United States was taken at the meeting of Technical Committee 61 on Plastics of the International Organization for Standardization, in Washington, D. C., November 3-8, 1958. This action was formation of a new Working Group on Specifications, an indication that the international committee has completed the necessary tests and analytical methods needed for the drafting of high-quality specifications. When work completed by the Specifications Group is available (the first specifications are expected in 1961), the United States plastics industry can do business in any part of the world, using a single standardization system. Evidence of the realistic viewpoint of the TC 61 group is the fact that its activity has been limited to "specifications, based on current commercial practice as reflected in national standards, for identification and quality control of plastics materials."

This was only one of the actions taken by Technical Committee 61 at its Washington meeting. The committee also approved five new draft ISO Recommendations and six draft ISO proposals. A draft ISO Recommendation listing approximately 800 equivalent terms in the three official languages (English, French, and Russian) was revised in accordance with comments received from member countries and approved for submission to the ISO General Secretariat for promulgation as an ISO Recommendation.

Fifty-six delegates from 12 nations[1] attended the sessions. Many of them had participated in an international symposium on plastics standardization and

MR ADAMS, Monsanto Chemical Company, St. Louis, Mo, was leader of the USA delegation at the Washington meeting of ISO Technical Committee 61. He has served as chairman of the American Group for ISO/TC 61 since December 1, 1955, and was general chairman of the committee on arrangements for both the symposium on plastics held in Philadelphia October 30-31 and for the TC 61 meeting itself. Mr Adams' term of office as chairman of the American Group expired December 1, 1958. He has been succeeded by W. E. Brown, Dow Chemical Company.

[1]Czechoslovakia (3), France (5), Germany (9), Hungary (1), Italy (1), Netherlands (3), Poland (2), Sweden (5), Switzerland (2), United Kingdom (4), United States (17), USSR (5)

POLYETHYLENE RESIN, which registered a growth of about 25 percent in 1958 over the previous year, is developing a large foreign market. Exports of polyethylene grew from 129 million pounds in 1956 to 230 million pounds in 1958. LEFT Eastman's low-melt polyetheylene, known as Epolene C, flows like a thick syrup (8000 cps viscosity) at 300 F. BELOW— The low-melt polyethylene can be used to form relatively hard, tough cast or slush-molded objects.

testing sponsored by ASTM Committee D-20 on plastics held in Philadelphia the preceding Thursday and Friday, October 30 and 31. Several of the international visitors also observed meetings of ASTM Committee D-20 earlier in that week.

The American group for ISO/TC 61 is a subcommittee of ASTM Committee D-20. The American group was organized in early 1951 on the recommendation of a study group which advised that the time was right for the initiation of an international activity on plastics standardization. As a result, and under the auspices of the American Standards Association, ISO/TC 61 was established. ASA holds the secretariat for this important activity. The American group serves in an advisory role to the secretariat on both technical and policy matters. All facets of the U. S. plastics industry, including consumer, fabricator, government, and materials manufacturers are represented on the American group roster, i.e., the Society of Plastics Engineers, the Society of the Plastics Industry, the Manufacturing Chemists' Association, and the American Society for Testing Materials.

Five new draft ISO Recommendations were added at Washington to the total of 24 draft ISO Recommendations developed by ISO/TC 61 up to the close of the 1957 meeting. These were approved for distribution to the ISO member-bodies for ballot. Included in this group are:

Standard Atmospheres for Conditioning and Testing Plastic Materials (Prepared by Working Group 3)

Melt Flow Index of Polyethylene and of Polyethylene Compounds (Prepared by Working Group 4)

Recommended Practice for Compression Molding Test Specimens of Thermoplastic Materials (Prepared by Working Group 7)

Recommended Practice for Compression Molding Test Specimens of Thermosetting Materials (Prepared by Working Group 7)

Recommended Practice for Injection Molding Test Specimens of Thermoplastic Materials (Prepared by Working Group 7)

Six new draft ISO proposals were approved for formal letter ballot of Technical Committee 61, as follows:

Tensile Properties of Plastics (ASTM D 638-56, recommended by Working Group 2)

Testing of Plastics with the Torsion Pendulum (Prepared by Working Group 2)

Determination of the Viscosity Number of Polyamide Resins in Solutions (Prepared by Working Group 5)

Determination of Acetone Soluble Matter of Phenolic Molding Materials (Prepared by Working Group 5)

Method of Test for Tracking under Moist Conditions [IEC Document 15 (Central Office) 8, recommended by Working Group 8]

Vicat Softening Point (Prepared by Working Group 4)

The eight Working Groups met in a total of 14 sessions and worked on approximately 35 of the items currently listed on the program of work. In addition to the actions reported above, their work covered the following:

Working Group 1, Nomenclature and Definitions

Work was completed on the List of Equivalent Terms, Draft ISO Recommendation 177. This document lists some 800 terms pertaining to plastics technology. The Secretariat was requested to submit the revised draft to the ISO General Secretariat in Geneva, together with a final report for ISO Council approval. This very significant work should be available as a published standard in mid-1959.

Working Group 1 is continuing its work on definitions and a card index system.

The group agreed that, for complex polymers, the form of nomenclature prepared by IUPAC should be stated first, followed by the name in the form of one word, e.g., poly (methyl methacrylate), polymethylmethacrylate.

DR G. M. KLINE, (standing), chief, Division of Organic and Fibrous Materials, National Bureau of Standards, was chairman of the ISO/TC 61 meeting in Washington. C. L. Condit, (seated) Society of the Plastics Industry, was secretary.

Working Group 2, Mechanical Strength Properties

TC 61 approved the Group's recommendation that the German method for determining dynamic mechanical properties of plastics be circulated as a first draft proposal. Another committee action resulting from Working Group 2 activity was approval for circulation of ASTM D 638-56, Tensile Properties of Plastics, as a second draft ISO proposal. Other active projects in Working Group 2 are the impact test (both Izod and Charpy), compression test, hardness test, and a test for modulus of elasticity. As a result of considerable discussion relative to specimen dimensions and geometry, Working Group 2 sponsored a resolution, which was approved by the committee. In it, the Secretariat for ISO/TC 61 was asked to communicate with the Secretariat of METESCO (Metal Testing Standardization Committee) suggesting that early consideration be given to terms and definitions for specimens used in testing in order to promote the use of the same, or equivalent, terms and definitions for testing metals and plastics.

Working Group 3, Standard Laboratory Atmosphere and Conditioning Procedures

Working Group 3 considered the preparation of a document on methods of measurement and control of relative humidity in large and small enclosures. It proposed that the ISO Committee on Atmospheric Conditioning for Testing (ISO/ATCO) be requested to prepare a document on the subject based on the experience and needs of interested technical committees.

Other methods under study include conditioning of polyamides, and relative humidity.

Working Group 4, Thermal Properties

Significant progress was made. The Group is now studying the test method for stiffness in torsion, methods for flammability, and new flow techniques for thermoplastic and thermosetting materials.

Working Group 5, Physical Chemical Properties

Under study are procedures for determining the gel time of polyesters, determination of the chlorine content of vinyl chloride polymers and copolymers, and methods for the viscosity loss of polystyrene and cellulose acetate.

Working Group 6, Ageing, Chemical, and Environmental Resistance

An active program of study is under way in the field of biological attack, resistance to light, change in mechanical properties after contact with chemical substances, and environmental stress cracking.

Working Group 7, Preparation of Test Specimens

This youngest of the Working Groups obtained committee approval of three first draft ISO Recommendations. Items of future work include the detailed design of a positive, semi-automatic mold for thermosetting test specimens which will be based on a Swedish mold design, and procedures and molds for preparation of stress-free, orientation-free plates.

Working Group 8, Electrical Properties

On the advice of this Group, TC 61 approved circulation of the draft method for determining the comparative tracking index of solid insulating materials under moist conditions, Document IEC 15 (Central Office) 8, as a first draft ISO proposal. Working Group 8 serves, by and large, in a liaison capacity between ISO/TC 61, Plastics, and IEC/TC 15, Electrical Insulating Materials. As a result, it reviews methods developed by IEC/TC 15 and advises what action should be taken by ISO/TC 61. Included in the group of methods received from TC 15 and under study in Working Group 8 are: Conditioning; corrosion effects; insulation resistance; thermal stability; dielectric strength; dielectric constant and loss; and tracking. The latter was the subject of the action cited above.

Administrative Items

Following the 1959 meeting, the leadership of Working Group 2 will be transferred from Germany to the United States, and the leadership of Working Group 7 will be transferred from the United States to Poland.

The possibility of cooperative work on test methods for cellular materials via ISO/TC 45, Rubbers, and ISO/TC 61, Plastics, will be considered.

Ninth Annual Meeting

At the closing plenary of the eighth annual meeting of ISO/TC 61, the leader of the German delegation in-

vited the committee to hold its ninth annual meeting in Munich during the week of October 26-31, 1959. This was accepted unanimously. Immediately preceding this meeting will be a symposium of the IUPAC Macromolecular Commission in Wiesbaden on October 12-16, a symposium on ageing, chemical, and environmental resistance of plastics by the IUPAC Division of Plastics and High Polymers in Düsseldorf on October 19, the German International Plastics Exposition "Kunststoffe 1959" in Düsseldorf on October 17-25, and the annual "Deutsche Kunststoff-Tagung" on October 20-21.

American Delegation

The American delegation to the eighth annual meeting of ISO/TC 61, chosen from the American Group for ISO/TC 61, represented a cross-section of the plastics industry.

Dr G. M. Kline, chief, Division of Organic and Fibrous Materials, National Bureau of Standards, presided as chairman of the meeting. C. L. Condit, Society of the Plastics Industry, was secretary, with N. A. Skow, Society of Plastic Engineers, and F. C. Frost, American Standards Association, as assistant secretaries.

Members of the delegation are listed below:

C. Howard Adams, Monsanto Chemical Company, St. Louis, Missouri, *leader*

William E. Brown, Dow Chemical Company, Midland, Michigan

Robert Burns, National Academy of Sciences, Washington, D. C.

Charles L. Condit, Society of the Plastics Industry, New York, N. Y.

A. A. Harban, Standard Oil Company of Indiana, Whiting, Indiana

Thomas Hazen, Union Carbide Plastics Company, Bound Brook, New Jersey

Gordon M. Kline, National Bureau of Standards, Washington, D. C.

Frank W. Reinhart, National Bureau of Standards, Washington, D. C.

Arnold H. Scott, National Bureau of Standards, Washington, D. C.

Norman A. Skow, Synthane Corporation, Oaks, Pennsylvania

Frank Y. Speight, American Society for Testing Materials, Philadelphia, Pennsylvania

Alfred C. Webber, E. I. du Pont de Nemours & Company, Wilmington, Delaware

Paul E. Willard, Food Machinery & Chemical Corporation, Baltimore, Maryland

G. H. Williams, Bell Telephone Laboratories, Murray Hill, New Jersey

R. R. Winans, New York Naval Shipyard, Brooklyn, New York

Ralph Witt, Johns Hopkins University, Baltimore, Maryland

E. Y. Wolford, Koppers Company, Pittsburgh, Pennsylvania

Members of the American Group for TC 61 were also in charge of the symposium on plastics held prior to the meeting of TC 61. In addition to C. H. Adams, who was general chairman of the symposium committee on arrangements, A. C. Webber was chairman of the symposium committee, with W. E. Brown, K. A. Kaufmann, N. A. Skow, F. Y. Speight, and R. K. Witt serving as members of his committee.

In addition to their work at the technical sessions, the delegates were entertained at a reception at which they were welcomed to Washington by the Honorable Robert E. McLaughlin, president of the District of Columbia Board of Commissioners. They also attended a luncheon at which Dr L. H. Farinhold, deputy science advisor of the Department of State, described the Department's new science attaché program. The luncheon was followed by a tour of the plastics and polymer laboratories of the National Bureau of Standards. The ladies who accompanied the delegates were received by Mrs Theodore R. McKeldin at a luncheon in the Governor's Mansion, Annapolis, Maryland.

OPENING the international meeting on plastics, ISO/TC 61—(left to right) Dr A. V. Astin, director, National Bureau of Standards; Vice Admiral G. F. Hussey, Jr, USN (Ret), managing director, American Standards Association (TC 61 secretariat); Henry St. Leger, general secretary, International Organization for Standardization; Dr G. M. Kline, chief, Division of Organic and Fibrous Materials, National Bureau of Standards, chairman of the meeting; C. L. Condit, Society of the Plastics Industry; Mrs Gern-Hess and Mr Morales, interpreters.

WHAT IS SIMPLIFIED DRAFTING?

by GEORGE NOBLE

MR NOBLE is in charge of the Standards Department, Dominion Engineering Works, Ltd, Montreal, Canada, and is vice-chairman of the Canadian Standards Association's Committee on Engineering Drawings, Mechanical Section. His article "Engineering Drawing at the Crossroads" was published in THE MAGAZINE OF STANDARDS, *August 1958, page 242.*

In the October 1958 issue of THE MAGAZINE OF STANDARDS *W. N. Gittings took issue with many of Mr Noble's ideas as expressed in the August issue. Mr Gittings is specialist on Standards, Development, and Training Courses, in the Switchgear and Control Division, General Electric Company, Philadelphia. His article "A Reader Speaks for Drawing Simplification" was published on page 304 of the October 1958 issue.*

AFTER having read, with a great deal of interest, Mr Gittings' criticism entitled "A Reader Speaks for Drawing Simplification," I feel impelled to correct some obvious misconceptions. It is evident to me that there exists a great deal of confused thinking with regard to the somewhat loosely used term "simplified drafting." There seems to be confusion as to the real distinction between simplification as applied to the drawing, and simplification as applied to the actual manual process of making the drawing.

With the former concept we are all agreed. We believe we can support the latter concept only so far as it does not conflict with the former.

Let us define what we mean by a simple drawing. In my opinion, this is a drawing which fulfills its only purpose; i. e., to convey the functional (and sometimes the constructional) requirements of the designer, to *anyone, anywhere,* who may be charged with the duty of processing, procuring, or in fact with any stage of manufacturing or producing the finished end product. To be simple, a drawing must contain nothing that is redundant or superfluous and yet must include any information which is necessary to indicate clearly these requirements, and to enable the product to be manufactured, anywhere, with interchangeable accuracy of parts, without recourse to further explanation or instruction, written or verbal.

Conversely, a complex drawing is one which is difficult to interpret—without possibility of error. It should be noted that a drawing can be made complex; i. e., more difficult to read, by the *omission* of information such as dimension lines, arrowheads, or other details, which some people have suggested should be omitted to simplify the work of making the drawing.

Many drawings today are also complex to outsiders, because information which should be included is left to the "good workshop practice" or inherent "know-how" of old, established companies which have so far not been required to sub-contract or have their drawings used by others not familiar with their own manufacturing conditions. It is unfortunate that many of the enthusiastic proponents of "simplified drafting" are so imbued with the idea of saving a few hours of drawing office time that they cannot see the relation of the proposed simplification to the costs of the end product, which may be adversely affected.

We are constantly told of the large sums being saved by these practices in drawing offices. No one, however, shows a breakdown of these savings as referred to the end products. Nor is it possible to evaluate how much of the savings is due to the sudden discovery of simple methods, long shown in national standards, of which some people are only just becoming aware.

Mr Gittings, in quoting my remarks, lists the ten points in the Bureau of Ships' document[1] which he considers I am opposing. If he will refer to my original article, he will discover that I stated that some of the practices outlined in the pamphlet were by no means universally approved.

As it appears necessary to spell these out, here is the list, with comments:

1. *Use a few words instead of a picture.*

Comment: This is definitely a retrograde step. Engineering, as indeed all other drawing, was originally adopted as the best means of communication. Euclid, and later Pythagoras, are reputed to have taught geometry by drawing with a pointed stick in the wet sand. I am still unaware of anyone who has been able to teach this subject, or indeed a great many others, without using some form of pictorial illustration.

2. *Use the minimum necessary views.*

Comment: Agreed, this has been advocated in national and international standards for years. See American Standard Z14.1-1946, and the latest edition, the various sections of the American Standard Drafting Manual, Y14.

[1]NAVSHIPS 250-520-6, Functional Drafting, Revised November 1957.

3. Omit elaborate, repetitive pictorial details.
Comment: See Comment No. 2. All progressive companies who have based their drawing standards on national standards have been doing this for years. See American Standards listed above. Also British Standard 308, pages 24-28, and Canadian Standard B78.1-54, Section 4 (Conventions).

4. Use numbers for standard items.
Comment: Perfectly permissible provided these are identified elsewhere on the drawing, in terms understood by all, by legend, material list, or other means.

5. Use dotted lines only to clarify.

6. Use hatching for clarification only.
Comment: See comments No. 2 and 3 above.

7. Use machine-set copy for lengthy notes.
Comment: Why use lengthy notes? If a drawing conforms to the definition of a "simple" drawing, notes should be unnecessary. They represent one of the greatest obstacles to use of simple drawings. No one will express his requirements in exactly the same way, nor will individuals interpret these the same way. They are probably the most frequent source of error today, as a large percentage of the readers are those for whom English was not their mother tongue.

8. Use freehand techniques where suitable.
Comment: No objection to this, provided the drawings are made to established standards and clarity is not impaired. Saving of time, however, will be just as great by wider use of templates, etc. with better uniformity and clarity.

9. Use ordinate dimensioning when appropriate.
Comment: The most appropriate method of dimensioning should be used, bearing in mind that simplicity and clarity of intent are the important factors governing the choice of means from all the standard methods listed in national standards. The omission of dimension and extension lines, however, is a dangerous practice. You cannot know that this will be universally understood by those who may read the drawing.

10. Consider legibility of reduced-size prints.
Comment: A quite detailed and extensive section is being included in all three ABC national standards, covering this subject. This has been compiled in consultation with all three defense departments and the armed services of the three partner countries and reflects the very latest information on processes adopted, or about to be adopted, by all English-speaking countries and some other members of NATO.

In reply to Mr Gittings' rather disparaging comment on the length of time necessary to introduce new ideas to national and international standards, I would point out the following examples of true simplification of drawings. These have been introduced, are approved nationally, and are being used in a great many companies, who follow national standards today. These have all been adopted during the period since ABC Unification began to be discussed.

Examples of True Simplification

1. Introduction of welding symbols in lieu of the haphazard specification of welding by note.

2. Introduction and extended use nationally, of surface finish requirements by symbol and standardized call-out techniques.

3. Introduction and agreement on geometric toleranc-ing and subsequent development of symbolic (i. e., ideographic or pictorial) methods of call-out. This latter has not yet been adopted by all three countries, but agreement has been reached on the form this will take when adopted.

It should be noted that all these are splendid examples of simplification of *drawings* and have only been approved by consultation and consensus of all concerned. The door is ever open to the adoption of further simplified projects if these will simplify the use and interpretation of drawings, without impairing clarity of intent.

Finally, what are we trying to do? Obviously, our objective cannot be limited to the saving of a few dollars in individual drawing offices, no matter how laudable this may be. Too many people cannot see beyond the immediate horizon of the drawing board. Our concept of simplified drawing must be global in scope. All thoughtful persons, who cannot fail to be concerned at the present trend of world events, are convinced that the free world must stand together and completely integrate all our resources. The storm clouds of economic and military crisis are only too plain to be seen.

Never again can we expect the pattern of the two World Wars to be repeated with countries and peoples joining at long intervals as more and more nations become involved. We can no longer afford to hold up production of vitally needed equipment for months until tons of drawings are re-drawn to make them intelligible to other people.

The acid test of unification and simplicity is the answer to the question, "Can this drawing be sent to a subcontractor in any part of the free world, and the product properly and interchangeably produced?" If this can be done when the subcontractor's telephone is out of order, his postal services disrupted, and all communications cut off from the design office, then and only then will we have arrived at a truly simple drawing.

STANDARD FITTINGS FOR INTERIOR WIRING SYSTEMS

IN VIEW OF the wide variety of fittings being produced today for use in installing rigid steel conduit and electrical metallic tubing, American Standard C80.4-1958[1] has been developed to coordinate the design and construction of fittings with the metal raceway itself. The use of conduit wiring and metallic tubing is today the most widely accepted method of installing interior electric wiring. Concerned that this type of wiring system might not serve most efficiently and usefully without coordinated standards, the sponsors of Sectional Committee C80 have encouraged the development of the new American Standard. The American Iron and Steel Institute and the National Electrical Manufacturers Association are the committee's sponsors.

The standard provides specifications, requirements for corrosion protection, performance tests, and detailed requirements covering rain-tight and concrete-tight fittings and accessories. However, fittings designed specifically for use in hazardous locations and to meet the requirements of the National Electrical Code for this special use are not covered, nor are cast-metal outlet bodies and floor boxes.

American Standard C80.4-1958 is designed to be used in conjunction with the American Standard Specification for Rigid Steel Conduit, Zinc Coated, C80.1-1953, and American Standard Specifications for Rigid Steel Conduit, Enameled, C80.2-1953, which outline the requirements for rigid conduit, threaded couplings, elbows or bends, and rigid conduit nipples. Requirements for the tubing, elbows, and bends for electrical metallic tubing are covered in American Standard Specification for Electrical Metallic Tubing, Zinc Coated, C80.3-1950 (Reaffirmed 1953).

In preparing American Standard C80.4-1958, the committee explored every facet of the problem in order to develop a standard that would fulfill all the requirements of the user in the best possible manner. For example:

1. Technological advances in production processes were studied to permit the latest improvements in design and at the same time recognize certain practical limits of manufacture to achieve economy. Extensive laboratory experiments were accordingly conducted on the zinc coating of threads, for example, in order to insure adequate corrosion protection without galling and the consequent poor joints that may result. The determination of strength factors, such as torque values, thicknesses of metal under the threads, and rib and flange reinforcements, was also investigated.

2. Simplification, where it could be achieved without reducing the essential types of fittings, was worked out in a way that would satisfy all parties affected without causing undue hardships to any group.

3. Extensive research into thread design and proper working tolerances was developed in cooperation with ASA Committee B2, Pipe Threads. This was done because of the desire of Committee C80 to adhere to the American Standards for pipe threads, while at the same time taking into account the special conditions faced by the installer of rigid conduit and metallic tubing.

4. Consideration was given to the problems of interpretation and enforcement, such as the responsibilities of the electrical inspector and the Underwriters' Laboratories, Inc. It was

[1]American Standard Specification for Fittings for Rigid Steel Conduit and Electrical Metallic Tubing, C80.4-1958, is available from ASA at 80 cents per copy.

SOME OF THE STANDARD FITTINGS that meet the requirements of American Standard C80.4-1958. **1** *Union, complies with paragraphs* 6.3, 11.1.5, *Tables* 2 *and* 3. **2** *Threaded enlarger, complies with* 11.1.6, 6.3, *Tables* 2 *and* 3. **3** *Non-metallic bushing, complies with* 11.1.3, 4.2, *Tables* 2 *and* 6. **4** *Threaded elbow, complies with* 6.3, *Tables* 2 *and* 3. **5** *Insulated metallic grounding bushing for rigid steel conduit, complies with* 11.1.2.3, 11.1.2, 6.3, *Tables* 2, 6, *and* 3. **6** *Threadless elbow for rigid conduit, complies with* 6.3, 6.2, 11.1.4, 4.1, *Tables* 2 *and* 4.

THE THOMAS & BETTS CO.

by WALTER O. ZERVAS

fully recognized that American Standard C80.4-1958 must be consistent in its basic premises with test procedures in other industry standards, as well as with provisions of Federal Government specifications.

The fittings manufacturing industry is made up of a large number of concerns, many of which have no affiliation with any national trade organization. For this reason, special invitations were extended to each fittings manufacturer to attend committee meetings, and to comment on the various drafts of the specifications as they were prepared. Several companies had representatives appointed on special task forces. Cooperation on the part of Committee C80 in giving consideration to the viewpoints of all elements in the industry, even at the expense of some back-tracking and delays, characterized the entire project. This provides an example of how a committee can utilize to best advantage the services and facilities of the American Standards Association to achieve maximum effectiveness and efficiency in carrying out its responsibilities to the public and all parties concerned.

Committee C80 held a total of eight meetings over a period of four years, convening approximately every six months, with several task force meetings held during the intervals. An average attendance record of 71 percent testifies to the conscientious effort of the committee members. This in itself supplies a reason for the constructive job that was turned out.

In the opinion of the committee and the sponsors, American Standard C80.4-1958 is an excellent standard that will meet with wide industry acclaim and universal acceptance.

MR ZERVAS, American Iron and Steel Institute, is secretary of ASA Sectional Committee C80, Steel Raceways for Electrical Wiring Systems.

ALLEGHENY LUDLUM STEEL CORP

STAINLESS STEEL, chosen because of its resistance to corrosion, was used in the 9,234 tubes, 26 feet long, shown here being installed in a condenser of the Monongahela Power Company's Rivesville Power Plant in West Virginia.

A report by J. G. HENDERSON

BETTER

SINCE 1951 the ASA Chemical Industry Advisory Board (CIAB), in cooperation with the steel industry, has been striving to have brought into commercial production a new molybdenum-bearing austenitic stainless steel alloy. Over the years there had been an increasing demand by the chemical industry for special modifications of the AISI Type 316 alloy in an apparent effort to improve general corrosion resistance. Usually a higher chromium content was sought, but wide variations in the content of other elements also were in evidence. Since demands were not uniform, modifications of the standard analysis usually could not be obtained from warehouse stocks. Securing end products from selective or modified heats was attendant upon procurement delays.

The chemical industry was surveyed to establish requirements of Cr-Ni-Mo stainless steels, and sufficient demand from a substantial number of consumers, both large and small, for a new standard alloy became apparent. A special CIAB subcommittee working jointly with AISI stainless steel technical committees decided upon a producible alloy that would more generally conform to the indicated requirements. The chemical composition is as shown in the table.

MR HENDERSON, Union Carbide Chemicals Company, Division of Union Carbide Corporation, South Charleston, West Virginia, is chairman of the Chemical Industry Advisory Board of the American Standards Association.

Stainless D319, a more corrosion-resistant stainless steel, developed as a replacement for the many modifications of AISI Type 316, is now commercially available. Result of work done by the Chemical Industry Advisory Board of ASA and the steel industry, it has been approved by the ASME Boiler and Pressure Vessel Committee. "It's Code approved. It's available. Let's use it," says Mr Henderson.

RESISTANCE TO CORROSION

D319 Stainless Steel—Chemical Composition

	Percent
Carbon, max	0.07
Manganese, max	2.00
Silicon, max	1.00
Phosphorus, max	0.045
Sulfur, max	0.030
Chromium	17.50/19.50
Nickel	11.00/15.00
Molybdenum	2.25/3.00

The designation "D319" was assigned by the American Iron and Steel Institute. It is known as a "development" alloy, and was so designated pending the making of a tonnage survey now scheduled for 1959. It was indicated by AISI that when sufficient demand develops, the new stainless steel would be designated "AISI Type 319."

Many of the special modifications of Type 316 procured and used by the chemical industry fall within the analysis range of D319. Up to 15 years of service experience has been reported, and this experience is all good. Actually, then, D319 is not a new and untried alloy, but rather the result of an intense cooperative effort to make an alloy of improved characteristics and broader service utility readily available on a commercial basis.

Those responsible for the project suggest that users of Type 316 or special modifications thereof consider the use of D319 for corrosion resistance, avoidance of product contamination, and ultimate ease of procurement. Because of the many variations in process conditions, no blanket recommendations can be made for specific new service applications. Assurances for these should invariably be sought, through the individual company's own testing procedures.

Formal approval for the use of D319 in Code construction has been obtained through Special Ruling, Case No. 1254, issued by the Boiler and Pressure Vessel Committee of The American Society of Mechanical Engineers. This approval is covered by the following reply to the CIAB inquiry:

"September 2, 1958. *Reply*: It is the opinion of the committee that a steel having a chemical composition as stated in the inquiry and designated D319 may be used for Code construction under all the rules applicable to Type 316 stainless steel. The allowable stress values for the regular Type 316 shall apply. The qualification of Procedure and Performance in Section IX for Type 316 shall apply."

Through inquiry by an individual chemical company it has been determined that substantially all of the principal stainless steel producers have stocks of D319 immediately available — some in ingot form; others in finished form — in both tonnage and reasonably minimum quantities.

Where Type 316 normally is used, D319 may offer improved general corrosion resistance. It's Code approved. It's available. Let's use it!

SPECIAL PROBLEMS that relate only to forging have been taken into consideration in the new American Standard on drawing practices for forgings. The forging process under actual working conditions is shown clearly in this picture.

BAY STATE ABRASIVE PRODUCTS CO

WHY'S OF THE DRAFTING STANDARD FOR FORGINGS

by CHARLES M. McMAHON

SPECIAL REQUIREMENTS called for in preparing drawings for forgings dictated the content and arrangement of the new drafting standard for forgings,[1] just published. This is one of the eighteen sections that will make up the American Standard Drafting Manual, Y14.

Forgings are used where the properties of high strength, toughness, or lightness are of major importance. Forged parts possess far greater strength than can be obtained when castings are used. Aluminum and magnesium forgings, produced for the aircraft industry, have properties of strength and lightness that can be equalled by no other method.

[1]American Standard Drafting Manual, Section 9, Forgings, American Standard Y14.9-1958, $1.50.

In addition, forging is an economical process for producing parts in large quantities where the die cost, which is usually high, can be absorbed by the pieces produced. The method of making forgings by means of dies containing impressions cut to the form of the forging makes it necessary to add considerable information to the drawing.

Drawing Requirements

Forging drawings differ in many respects from other types of engineering drawings. The showing of draft, parting line, and forging plane is common only to forging drawings. In some cases design of the part is dependent upon the requirements of the forging process.

Information needed by the designer or draftsman falls into three distinct divisions, forging processes, design, and drafting.

A knowledge of the basic methods of forging and the equipment used is an aid to the understanding and use of the design section. This is particularly true among the younger men or those who have infrequent contact with forging drawings.

Each forging method has a size range or type of work in which it is most efficient. Before work can be started on a drawing, the method to be used for producing the forging must be decided upon, as the design is different to some degree for each process.

There are definite rules for design that must be followed for the efficient production of a satisfactory forged part. Standard proportions for ribs, fillets, corner radii, and other details have evolved over the years. All of these have some effect on die performance and life. Proper design can reduce die cost by permitting the use of standard methods and tools. This, in turn, will reduce the forging cost, particularly for small lot production.

A forging drawing is used mainly for making the forging die and checking the finished forging. Any errors resulting from poor drafting practice will be costly, due in part to the large amount of work involved in making the die. Therefore, the drawing must mean the same to all who use it.

Draft, or the taper provided for removal of the forging from the die, must be shown and properly dimensioned. The use of draft on the die surfaces produces intersections that are not easy to visualize for anyone unfamiliar with forgings. These are clearly illustrated in the standard.

Dimensioning must follow definite rules so that those using the drawing are provided with dimensions and tolerances that can be used directly in their work.

Existing Standards

There are in existence a number of forging drawing standards that have originated in the drafting rooms of forging suppliers or users; or they may be the joint effort of an entire industry.

The larger producers of forgings have developed comprehensive standards for drawings. These are usually company standards and never receive wide circulation. Plants of the size necessary to handle a standardization project of this sort are relatively few in number.

Many large users of forgings have also written forging drafting standards. Each of these is usually made a section of the company drafting standard and is fitted to the needs of the plant using it.

The automotive industry has a forging section in its drafting standard. This was written primarily to fit the industry's needs.

Unification

Committee work that extended over a period of four years selected information from every available source for the American Standard on Forgings, Y14.9-1958. Particular attention was paid to the diverse needs of industry to make certain that information was included for all types and sizes of forgings.

Existing standards provided a large amount of information. This was used in planning the standard and as a source of data for committee discussion.

The first draft of the standard was circulated for comments. Copies were sent to individuals in industry, universities, and standards committees. The comments received contained a great deal of information and also called attention to errors and omissions.

Use of Standard

Any of the smaller drafting rooms having occasion to make forging drawings should find this standard particularly useful. There are also many larger concerns where company drafting standards are in use, but forging drawings have never reached the quantity considered necessary to make it worthwhile to provide a standard. In either case, there are usually not enough drawings of this type for the draftsman to become familiar with their special features.

The ready access to a standard giving the needed information in a usable form will save considerable time in making the drawing.

Differences of opinion that occur between those responsible for making the drawing are greatly reduced when all drawings conform to a standard.

Errors in reading the drawing are reduced during the diemaking, forging, and machining operations, as the information always appears in the same form on every drawing.

The standard was arranged to give the needed information in a logical sequence and in a form that allows it to be readily used in the making of a drawing.

MR McMAHON is chairman of Subcommittee 9, Forgings, Sectional Committee Y14, Drawings and Drafting Practice. He is with the Bay State Abrasive Products Company, Westboro, Mass.

This is the seventeenth installment in the current series of rulings as to whether ***unusual industrial injury cases are to be counted as "work injuries" under the provisions of American Standard Method of Recording and Measuring Work-Injury Experience, Z16.1-1954.*** *The numbers in parentheses refer to those paragraphs in the standard to which the cases most closely apply. These cases are issued periodically by the Z16 Committee on Interpretations.*

Case numbers in the current series start with 400. Cases 400-500 have been reprinted with an index prepared by the National Safety Council. To make it easy to locate all cases applying to any section of the standard, the index is arranged both numerically by paragraph number of the standard and numerically by case number. Each index reference includes a brief description of the case. Reprints are 75 cents per copy, available from ASA.

Sectional Committee Z16 is sponsored by the National Safety Council and the Accident Prevention Department of the Association of Casualty and Surety Companies.

Are These Cases Work Injuries?

CASE 592 (5.1)

An employee sustained a non-occupational right inguinal hernia after which surgical repair was performed, and the employee was released for employment by the attending doctor (Dr A). However, because there was no work for the employee, it was not until three months after surgery that he was recalled to do hand moulding. He requested, and received, instead, labor work as this was less strenuous.

This labor work consisted of moving loaded cars from the presses and returning empty cars to the presses. One Friday about five weeks later the employee was helping four other men lift a charger (weighing about 500 pounds and about 3 feet above floor level of the press) from the press. Three men were on one end of the charger. The employee in question and another man were on the other end of the charger. The three men were pulling the charger straight out of the press while this employee and his partner were waiting each on an opposite side of the press to catch the rear end of the charger and rods as the charger was pulled out of the press.

When the charger came out of the press the employee caught hold of it and felt a sharp snap of pain in the area of the hernia operation as he did so. The pain was reported immediately to the injured employee's foreman. The pain continued to sting and burn. By chance, that evening the employee saw Dr B who stated that the hernia had recurred, and gave the employee a note to this effect for the employer.

On the following Monday, the employee, after reporting to work, was sent to Dr C, who handled occupational injuries for the employer. Dr C released the employee as being able to work, but specified that no heavy lifting be done for the present time. The employee was thereupon put to floor-sweeping work. He continued to have burning pains in the stomach area, and a week later he stopped by to see Dr A who stated that the employee had an incisional hernia, and recommended an operation.

Before the incident (of catching the end of the charger and rods as the charger was pulled out of the press) occurred, the employee had stated that he did not feel his recent hernia operation was very successful. The company wondered whether, if the first hernia operation was not successful (and the employee had a weakness), the incident should be included in the rates.

Decision: The committee concluded that this should be considered an industrial hernia and included in the work injury rates. The members believed that even though the first hernia operation might not have been successful, the hernia should be counted.

CASE 593 [A1.6(i)]

A repair crew was engaged in road repair work. The foreman in charge of the work announced that it was time for the afternoon rest break. Instead of going to the smoke shack for their rest, two employees left the area of work, without permission from Supervision, and went squirrel hunting. The employee in question climbed a tree where he had noticed a squirrel, and the decayed limb on which he was standing broke. He fell approximately 12 feet to the ground, and fractured his left arm. Employees had been instructed that hunting was not permitted on company property without special permission.

Decision: The committee decided that this incident should not be considered a work injury and should not be included in the work injury rates. The members believed that when the employee went hunting he took himself out of his employment, and his activity at the time of injury was in no way related to his employment.

CASE 594 (5.6)

Employee X returned from lunch to the the plant, but had not yet "rung in," as he was not due to start work for another five minutes. He ascended some steps to the loading dock where several fellow employees were talking. Most of these employees were off duty; however, Employee Y was on duty although he was only visiting at the time.

X walked up to Y and, punching at his ear, made a buzzing sound. Y picked up X by grabbing him around the middle from behind and spun him around. As X's legs were flailing through the air one leg came into contact with a steel post resulting in a fractured ankle.

The company questioned whether this

injury to an off-duty employee should be counted.

Decision: The committee decided that this injury should be included in the work injury rates in accordance with the ultimate extent of disability. The members believed that the fact that Employee X had not yet rung in would not be a basis for excluding the case, since the standard does provide for charging some injuries even though they occur during the lunch hour.

CASE 595 (1.6)

A raise miner and a fellow employee were loading holes in the access shaft being raised from the powerhouse to the surface. They were working from a cage at a point about 80 feet above the powerhouse excavation. The raise miner was working from a steel platform on the top of the cage, and the other employee was working on a middle deck made of wood. The cage was enclosed with heavy wire screen.

A gigantic electrical disturbance caused by lightning occurred, and the raise miner was fatally injured. Just prior to the blast the fellow employee heard him cry out for help which made the company believe the injured man felt a shock prior to the touching off of the loads. It appeared that from one to three holes were discharged.

The company questioned whether this fatality should be included in the rates since it was the result of a lightning storm, and did not arise out of conditions of employment.

Decision: The committee concluded that this fatality should be included in the work injury rates. The members believed that this fatality should be considered as having arisen out of and in the course of employment since this concept includes the environment of employment. While it was possible that the explosion may have resulted from the lightning storm, the injury resulted because the employee's work required him to be in the hazard area.

CASE 596 (1.5)

A female general office clerk, without permission, walked about 600 feet down the main aisle of the company manufacturing area to the receiving department. In this department was located a standard platform scale fitted with a roller conveyor. An employee of the receiving section, at the request of the employee in question, placed a piece of cardboard over the rollers, and the clerk stood on it to weigh herself. As she stepped off the scales the cardboard slipped from under her left foot, causing her to fall heavily on her right foot, severely twisting her ankle and fracturing her metatarsus bone. The clerk's foreman was absent on the day of the accident, and her general foreman was not aware that she had left her office.

The company questioned whether this injury should be included in the rates since the employee was on a personal mission for her own benefit.

Decision: The committee decided that this injury should be included in the work injury rates. The members believed that the standard does not specify that every specific action taken by an employee must be strictly in the interest of the employer in order to fall within the scope of the employment. Nor is there any requirement that every act of the employee must have direct approval by his supervisor. They pointed out that previous decisions excluding cases from the record on the grounds that the employee had taken himself out of the employment had been based upon gross departures from the expected actions of employment; whereas, casual departures from the specific duties of employment in the category of minor personal diversion had consistently been held *not* to constitute grounds for excluding injuries. They believed that from the evidence presented it would not be reasonable to conclude that this employee's visit to another part of the plant constituted taking herself out of the employment, and cited similar circumstances in Case Nos. 411, 430, 435, 544, and 577 in which the resulting injuries had been held to be reportable.

CASE 597 (5.2)

Nearly ten years previously, this employee had suffered a back injury while working at a generating station. At that time he was to take concrete samples on a job at a generating station and to bring back these samples to the laboratory. While picking up one of these test cylinders (weighing approximately 30 pounds) and turning to put it into the trunk of a company car, he felt a kink in his back. He was examined at the company dispensary, and no time was lost from work.

On the day in question (nearly ten years later) the employee was working with another employee carrying one test rack (about five feet long and weighing about 40 pounds) from the roof to the third floor of the testing laboratory. It was a two-man job, and the rack had to be brought down the stairway to a truck on the third floor. It was awkward to carry the rack, and the employee in question believed that in twisting around he reinjured the base of his spine. He felt a dull aching pain in his back and had difficulty in straightening up. He mentioned this fact to the other employee, and continued to work.

The ailment flared up at different intervals after the incident, and he received diathermy treatments at the dispensary. He lost three calendar days from work.

Decision: The committee decided that this should be included in the work injury rates on the basis that there was an incident as required by paragraph 5.2 (a), and, in the absence of a statement concerning a doctor's opinion, the members assumed that the company was satisfied that paragraph 5.2 (b) had also been met.

CASE 598 [A1.6 (d)]

A small crew employed as tank repairmen had one company vehicle assigned to them, and they were authorized to use this vehicle to obtain necessary meals, since they were frequently away from home at night. When they had completed this particular day's work, they returned to the company bunkhouse (where they were staying overnight) in order to clean up, and then two of them set out in the company vehicle to a nearby restaurant, as there were no eating facilities within walking distance. After eating, they proceeded in direct route back to the company bunkhouse when they were struck from the rear by another vehicle. One employee sustained multiple bruises, and although he reported for work the next morning, he subsequently lost several days from work because of the injuries.

Decision: The committee concluded that this case should not be included in the work injury rates on the basis that the accident occurred during what should be considered as normal living experience and not part of the employee's work.

CASE 599 (1.5)

A leak occurred in a line from a tank containing trichloroethylene. The point of leakage was in A Division building. The fire department and other local facilities were on the plant premises, and a B Division employee, in helping to carry a fireman who had collapsed (weighing over 200 pounds) suffered a hernia condition. The B Division employee was examined within a half hour by an A Division doctor, and re-examined later in the day by a B Division doctor, who confirmed the diagnosis of hernia. The B Division building is on the same physical site as the A Division building, but it is a separate division with a separate and distinct structure, not connected with A Division buildings. The B Division employee in question whose duties in no way were connected with rescue or diaster events voluntarily assisted.

Decision: The committee concluded that this should be included in the work injury rates because, although the employee was working for a different division, he was actually volunteering his services in order to benefit his employer when he was injured.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

NOTE: A list of German standards published in English that have been received by the American Standards Association can be obtained from ASA. This list also includes the price of the standards. Preliminary lists of these standards were published in THE MAGAZINE OF STANDARDS, November 1958 and January 1959.

534 ACOUSTICS. SOUND. VIBRATIONS

France (AFNOR)

Acoustics, vocabulary NF S 30-001

United Kingdom (BSI)

The relation between the sone scale of loudness and the phon scale of loudness level BS 3045:1958

USSR

Acoustical units GOST 8849-58

621.3 ELECTRICAL ENGINEERING

Argentina (IRAM)

Portable electric hand-lamps (for general use) IRAM 2127
Resistivity of electrical conductor materials (method of test) IRAM 2128
Low-power electric motors IRAM 2129

Australia (SAA)

SAA approval and test specs for overhead line connector boxes C.124-1958 Ap.
SAA approval and test specs for extra-low-voltage transformers C.126-1958 Ap.
SAA approval and test specs for electric fuses C.135-1958 Ap.
SAA approval and test specs for flexible PVC conduit C.154-1958 Ap.
Bare and covered hard-drawn copper conductors (for overhead lines) C.306-1958
Four-pin, round-pin plugs and plug sockets (medium voltage, 10-ampere rating) C.317-1958
Earth leakage protection equipment in coal and shale mines C.318-1958
Lead-acid batteries of the automobile type D.2-1958

Bulgaria

Electric cells: dry and Leclanché type BDS 73-58
Micanite for electric machine commutators BDS 1144-57
Electric three-phase asynchronous motors from 0.6 to 1000 kw, method of testing BDS 2672-57
Electric machinery, nomenclature of aggregates and details BDS 2686-57
5 stds for steel tubing and fittings for low voltage electric wiring BDS 2739/43-57
Low voltage connection clamps BDS 2773-57
Electronic tube bases, type "Noval" BDS 2825-57
Graphical symbols for telephone cable network BDS 2870-57

Canada (CSA)

Canadian electrical code, Part 1, Supplement R, Rules approved for the next edition of Canadian electrical code C22.1-1958
Construction and test of switchgear assemblies C22.2 No.31-1958
Electrochemical corrosion of underground metallic structures C22.3 No.4-1958

Czechoslovakia (CSN)

Air drying filters for non-rotating electromagnetic machines CSN 35 1490
9 stds for different sizes and types of distribution cabinets up to 35 kv voltage CSN 38 1960/8

Germany (DNA)

2 stds for press-board used in electrical engineering DIN 7733/4
Standard form of lightning arrow danger sign DIN 40006
Printed circuits, general rules for DIN 40801
Nominal currents for switchgears up to and over 1 kv DIN 43626
Umbrella insulator for overhead lines, basic design for DIN 48115
Lamp socket BX 22 d/32 DIN 49741

India (ISI)

Outdoor type three-phase distribution transformers up to and including 100 kva 11 kv IS:1180

Japan (JISC)

8 stds for different fitting of overhead line for electric trolley busses (bound together) JIS E 2220/7
10 stds for different insulating varnishes JIS series C 2350
3 stds for hard and soft filling compounds for cables JIS C 2382/4
Resistance wire, silk covered JIS C 2528
X-ray cable, rubber insulated JIS C 3407
Phonomotor JIS C 5506
Fluorescent lamps preheated type equipment set JIS C 8106
Fluorescent lamps ballasts JIS C 8108
Electric iron JIS C 9204
Electric blankets and pads JIS C 9210
Buzzer, dry battery type JIS C 9701

Netherlands (HCNN)

Accumulators. Starter batteries. Lead-acid NEN 968
Recommendations for installations for electric telecommunication NEN 1065

Union of South Africa (SABS)

List of electrotechnical terms: Group 05: Fundamental terms SABS 042-05-1957

United Kingdom (BSI)

Semi-enclosed electric fuses BS 3036:1958
Radio-frequency cables for use with domestic television and V.H.F. receiving aerials BS 3040:1958
Television and V.H.F. broadcast receiving aerial feeder connectors BS 3041:1958

621.9 TOOLS. MACHINE TOOLS. MACHINING

Argentina (IRAM)

Steel files for mechanics IRAM 5068

Bulgaria

Vices, workbench type BDS 2793-57
Wrenches for hexagon and square sockets BDS 2835-57
Wood turning lathes BDS 2901-57
Lathe tail centers BDS 2916-57
Standard taper for tool shanks BDS 2926-57
Lathes, metal cutting and wood working, general requirements BDS 2955-57
Hook wrench for round nuts BDS 2966-57
Power press, crank shaft type BDS 2987-57
Hobbing milling cutters BDS 2988-57
Stocks for round dies BDS 3007-57
2 stds for modular tooth-cutting milling cutters BDS 3122/3-58

Japan (JISC)

Bolt clippers JIS B 4643
4 stds for bending, forming and drawing dies JIS B 5052/5

USSR

Lathe chucks for general purposes GOST 1654-58
Plates for cold stamping metal GOST 7254-58
Automatic single spindle lathes GOST 8831-58

629.11 LAND VEHICLES. TRANSPORT ENGINEERING

Bulgaria

Asbestos friction lining for clutches BDS 3070-57

Denmark (DS)

2 stds for 2- and 4-wheeled farm wagons, main dimensions DS 793/4
2 stds for wheels for farm wagons, mounting dimensions, tires and rims DS 795/6
6 stds for snow-ploughs for trucks DS 798.0/.5

Germany (DNA)

Drop base rims for motorcycles, wheels diameter 16", 18" and 19" DIN 7816
Valve 43 GS for tubeless tires DIN 7780
Tires for agricultural wagon DIN 7812
Fifth-wheel kingpin for saddle-type trailer DIN 74080
Axles for motor car trailers, dimensions DIN 74322

Israel (SII)

Flexible air brake hoses S.I. 273*

629.13 AERONAUTICAL ENGINEERING. AIRCRAFT

Netherlands (HCNN)

Aircraft. Units of measurement in air-ground communication NEN 1801

Japan (JISC)

Oil coolers for aircraft, tubular type JIS W 2802
Hydraulic pumps for aircraft JIS W 2901
Hydraulic pressure accumulators for aircraft JIS W 2905
Magnetos for aircraft engines JIS W 4581
Fuel pressure gages for aircraft JIS W 6301
Oil pressure gage for aircraft JIS W 6304
Turn and slip indicator JIS W 6109

665.4/.5 MINERAL OILS. WAXES

Argentina (IRAM)

Petroleum products: method of test for phosphorus in lubricating oils IRAM 6580
Bitumen, method of test IRAM 6584
Method of test for proportion of bitumen soluble in carbon tetrachloride IRAM 6585
Petroleum products: method of test for carbonizable substances in paraffin wax and white mineral oil IRAM 6592
Bitumen, method of test for distillation of cut-back asphaltic products IRAM 6595

France (AFNOR)

Softening point test of bituminous products NF T 66-008

Spain (IRATRA)

Determination of softening point of bituminous products UNE 7111
Distillation test of cut-back asphaltic products UNE 7112
Specific gravity of asphalts and tars for handling in fragments UNE 7114
Determination of specific gravity of road tars, asphaltic bitumens and soft tars UNE 7115
3 stds for different tests of bituminous plates for filling joints of concrete pavements UNE 7122/4
Determination of softening point of tars UNE 7127

USSR

Method of determination of coking properties of petroleum products in electric oven GOST 8852-58

667.6/.8 PAINTS. VARNISHES. LACQUERS

Argentina (IRAM)

2 stds for ready mixed oil paints, brushing, for exterior and interior use IRAM 1126, 1148
Ready mixed oil paints, general test methods IRAM 1130
Shoe polish, solid, solvent type IRAM 1144
Marine type paint, grey IRAM 1147

669 METALLURGY

Argentina (IRAM)

Method of testing tin coatings of siderurgical products IRAM 112
Spot test for determining the local thickness of electrodeposited coatings of lead, zinc, or cadmium over steel IRAM 117

Australia (SAA)

Carbon steel plates for boilers, unfired pressure vessels and their appurtenances B.58-1958
Steel wire for ropes B.153-1958

Canada (CSA)

Specification for steel wire: general purpose G4-1958
Specifications for aluminum and aluminum alloys HA Series-1958

USSR

Protective and decorative galvanizing of various metals GOST 3002-58
Method of controlling thickness of galvanized layer GOST 3003-58
Torsion test on metals GOST 3565-58
Standard gas pressure in gas metal smelting furnaces GOST 8856-58

669.1 FERROUS METALS

Hungary (MSZH)

Steel rods for reinforcing concrete MSZ 339-56
Iron and steel castings: technical requirements MSZ 2591-57
High manganese steel castings, technical requirements MSZ 17742-57
Special steels for flame-, induction- and drip-hardening MSZ 17782-57
Chromium steel for roller bearings MSZ 17789-57

Japan (JISC)

Hard drawn steel wire JIS G 3521
Wire nails for export JIS G 3526
4 stds for steel wire, including barbed wire JIS G 3530/3
Light-gage steel shapes JIS G 3550

Spain (IRATRA)

Ferrotungsten UNE 36153
Ferrophosphorus UNE 36156

USSR

Method of testing for inter-crystal corrosion of austenitic and austenitic-ferrite stainless steels GOST 6032-58
Special steel shapes for metal window frames GOST 7511-58
Strips and bands of steel mark P-11 GOST 8851-58

669.2 NON-FERROUS METALS

Israel (SII)

Classification of copper scrap S.I. 270*
Classification of brass scrap S.I. 271*

Japan (JISC)

3 stds for zinc-alloys for die casting, (bound together) JIS H 2201
7 stds for brass and bronze castings, (bound together) JIS H 5101
2 stds for magnesium alloy castings JIS H 5203,-8651
Wire screening for paper manufacturers JIS H 6101

Netherlands (HCNN)

The B.N.F. jet test for thickness of electrodeposited coatings NEN 5252
Electroplated coatings of nickel and chromium NEN 329

Spain (IRATRA)

Copper aluminum alloy, "Cual": forged and drawn shapes UNE 37115
Light magnesium alloys for forging UNE 38621

USSR

Wire of copper-zinc alloys GOST 1066-58
Lead, method of spectro-analysis GOST 8857-58

674 WOOD INDUSTRY

Australia (SAA)

Milled products from south-eastern Australian hardwoods 0.62 to 0.65-1958
Interim grading rules for sawn radiata pine for use as building scantling SAA Int. 376, May 1958

Belgium (IBN)

Wood preservatives for carpentry and joinery NBN 439

Czechoslovakia (CSN)

Standard allowances for shrinkage of freshly sawn lumber, different species CSN 49 1209
Plywood, technical requirements for CSN 49 2411

Netherlands (HCNN)

Wood for building and hydraulic purposes NEN 3180

Union of South Africa (SABS)

Standard specifications for wood preservatives with a creosote basis SABS 590/4-1957

676 PAPER AND PULP INDUSTRY

Finland (SFS)

Pasteboard folding box for general use Z.II.8

France (AFNOR)

7 stds for different tests on pulp, papers and pressboards NF Q 03-006/-012

Japan (JISC)

Vinylidene chloride treated paper JIS Z 1515

677 TEXTILE AND CORDAGE INDUSTRY

Germany (DNA)

Tensile test of textiles DIN 53861
6 stds for different color fastness tests of textiles DIN 54005/6,-20, 54040/1,-4
Cotton yarn DIN 60300
Worsted wool DIN 60411
Sizes of yarns and fibers, conversion tables DIN 60910

Japan (JISC)

3 stds for methods of testing nylon yarn JIS L 1033/5

Netherlands (HCNN)

Textile testing. Determination of the tensile strength and breaking extension of a yarn NEN 3127

Switzerland (SNV)

Determination of ether soluble particles in wool combings SNV 95647
Principles for testing the color fastness of dyeings and prints SNV 95800
Grey scale for evaluation of change of color SNV 95805
Grey scale for evaluation of bleeding SNV 95806
Determination of daylight fastness of dyeings and prints SNV 95810
3 stds for determination af washability of dyeings and prints at respectively 40° C (A), 60°C (B) and 95°C (C) SNV 95812/4
Determination of water-spotting fastness of dyeings and prints SNV 95817
2 stds for determination of respectively mild and strong water-fastness of dyeings and prints SNV 95818/9

AN INTERNATIONAL ORGANIZATION OF STANDARDS PEOPLE

by ARTHUR F. BURNS

AS A READER OF THE MAGAZINE OF STANDARDS, you are aware of the importance of standards and of the benefits offered through standardization throughout all phases of our engineering and industrial economy. As you know, the American Standards Association provides channels through which standardization may, when desired, be extended beyond company or trade association horizons to become national or international in scope.

Before standardization can be achieved in any company or field of activity, however, the broad objectives must be clearly established and defined. It is the standards engineers in most organizations who must chart the course toward determining the things to be standardized and how the work is to be done. This means that standards engineers should be familiar with the experiences of others in the development and use of standards, on as broad a basis as is possible.

The Standards Engineers Society was organized in 1947 to provide a convenient channel for the interchange of information and experience in standardization. It was the hope and it continues today to be the objective of the Society that SES should provide standards engineers and industry with substantial benefits through the exchange of information and ideas. Progress toward this objective is indicated by the growth of the Society to a present membership of over 800, with 14 active local sections throughout this country and Canada, and with membership also in five other countries. The Society was incorporated in 1956 and its seal has been registered.

The Society publishes and provides all members with a bi-monthly magazine, *Standards Engineering,* which covers current standards activities and news. The detailed published Proceedings of the annual technical meetings of the Society are available to all members at a discount price.

Undoubtedly there are many standards engineers throughout the industrial areas of the country who do not know about SES or, if they do, are not now members. Many of them, we are sure, will welcome the opportunity to participate in the numerous benefits and advantages to themselves and their companies offered through membership and active participation in the activities of the Standards Engineers Society.

If you are not now a member and are interested in learning more about SES or in applying for membership in the Society, you may obtain information about the Society, a descriptive brochure, and membership application blanks by writing to the chairman of the SES New Section Development Committee, 1025 Connecticut Avenue, N.W., Washington 6, D. C.

MR BURNS, who is with the Bell Telephone Laboratories, Inc, was chairman of the SES New Section Development Committee in 1958.

new international recommendations

ISO Recommendations published by the International Organization for Standardization, Geneva, Switzerland. Copies are available from ASA.

SUBSTANCES OF PAPER. ISO R 58. *March* 1958. *First edition.* 60 *cents.* Recommends that in international trade the weight of paper and board, expressed in grams per square meter, shall be made in increments according to the 20-series of preferred numbers.

LENGTHS OF FLAT TRANSMISSION BELTS. ISO R 63. *April* 1958. *First edition.* 60 *cents.* Defines the lengths of flat transmission belts, stated as their inside lengths under normal fitting tension, in a table giving equivalent values in both millimeters and inches.

STEEL TUBES. OUTSIDE DIAMETERS. ISO R 64. *April* 1958. *First edition.* 60 *cents.* Contains three tables of dimensions of outside diameters for steel tubes with their corresponding values in millimeters and inches, to assure interchangeability.

STEEL TUBES SUITABLE FOR SCREWING IN ACCORDANCE WITH ISO RECOMMENDATION R 7.* ISO R 65. *April* 1958. *First edition.* $1.20. Establishes the dimensions and the characteristics of seamless and welded steel tubes. Tables of corresponding values in millimeters and inches give the dimensions of steel tubes in four separate series: heavy, medium, and light series I and II. In all cases, the dimensions ensure practicable interchangeability.

*ISO Recommendation R 7 covers pipe threads for gas list tubes.

IEC Recommendations published by the International Electrotechnical Commission, Geneva, Switzerland. Copies are available from the American Standards Association.

RECOMMENDED METHODS OF MEASUREMENT ON RECEIVERS FOR FREQUENCY-MODULATION BROADCAST TRANSMISSIONS. IEC Publication 91. 1958. *First edition.* $6.00. Enables the performances of radio receivers for frequency-modulation sound broadcasting in the range 87.5 Mc/s-108 Mc/s, as determined by different observers, to be compared. The proposed methods are designed to make possible the assessment of the performance of the complete receiver, without any provision being made for going into the details of the apparatus or for giving its components separate consideration. The 7 chapters, including 39 figures, are divided as follows: General, Sensitivity, Interference, Frequency/Response Characteristic, Distortion, Stability, and Miscellaneous.

RECOMMENDED METHODS FOR THE MEASUREMENT OF DIRECT INTERELECTRODE CAPACITANCES OF ELECTRONIC TUBES AND VALVES. IEC Publication 100. 1958. *First edition.* $4.00. The recommendations apply to measurement of the direct interelectrode capacitances of electronic tubes of the following types: Receiving tubes; cathode-ray tubes; gas tubes; photo-tubes; photocells and multiplier types; and high-power vacuum tubes. Tables of electrode connections for the measurements and descriptions of methods of measurement are included. Also, detailed specifications are given for the standard sockets, shields, and cap connectors to be used in the measurements.

news briefs.....

• THE PROCEDURES of the American Standards Association followed in establishing common names for pesticides were recommended to the Food and Drug Administration recently by Dr Bernard L. Oser, president of Food and Drug Research Laboratories, Inc. The recommendation was made during a discussion of a new law requiring the labeling of food stuffs containing additives. Dr Lloyd Miller, director of revision, United States Pharmacopeia, called attention to the need for devising common names to replace the "jaw-breaking" generic terms that will have to be placed on the labels of foods containing additives. Dr Oser reported to the meeting on the work of an ad hoc committee of the Food Law Institute which studied the problem of common names under his chairmanship. Dr Oser said that the committee had concluded that the problem of establishing names is best solved by using existing organizations able to perform this work and suggested using the facilities offered by the American Standards Association, which is now performing similar work for the pesticide industry.

• THE AMERICAN STANDARD SAFETY CODE for Mechanical Refrigeration has been brought up to date in a new edition, B9.1-1958.

Widely used throughout the country as the basis for state and local requirements for safe design, construction, installation, and operation of refrigerating systems, the new edition was prepared by a sectional committee sponsored by the American Society of Refrigerating Engineers.

Among the more important changes of the 1958 edition is a provision that brings single-family residences under the Code requirements. Formerly, the reference to "residential occupancy" limited this application to "more than two families." Also, provision is made throughout the standard for use of the "limited charged system." This is a system designed with a large-volume receiver, which permits complete evaporation of the refrigerant charge and thereby avoids extra-heavy vessel design when low temperature refrigerants are used. These refrigerants, such as Refrigerant-13, have relatively very high saturation pressures at normal-ambient shut-down temperatures. Refrigerant-13 has been added to the Refrigerant Classification list, Group 1, and in other sections of the standard where necessary, to bring it under the Code requirements. Now, too, the use of butt-welded pipe up to 4 inches in size is permitted, since lap-welded pipe is not made smaller than 4 inches.

In addition, formulae have been changed to be consistent with the latest revision of the ASME Boiler and Pressure Vessel Code, and references to other standards have been brought up to date.

An interpretations subcommittee, with J. R. Chamberlain, York Division, Borg-Warner Corporation, as chairman, has the responsibility for interpreting the provisions of the standard and of submitting recommendations to the sectional committee for future revisions.

R. L. Williams, Freon Products Division, E. I. du Pont de Nemours & Co, Inc, Wilmington, Delaware, is chairman of Sectional Committee B9. Mr Chamberlain is vice-chairman of the committee as well as chairman of the interpretations subcommittee. Secretary of the committee is Henry G. Lamb, American Standards Association.

American Standard Safety Code for Mechanical Refrigeration, B9.1-1958, is now available at $1.00 per copy.

• AMERICAN INDUSTRY and other groups concerned with aluminum oxide are being canvassed by the American Standards Association as to whether they are interested in the development of international standard methods for the chemical analysis of aluminum oxide.

The question of international standards for aluminum oxide was discussed in June, 1958, at a meeting of the International Organization for Standardization's Technical Committee 79, Light Metals and Their Alloys, at Harrogate, England. The delegates present at that time felt that the study of light metal ores was not within the scope of their committee and, therefore, they eliminated the study of methods of chemical analysis of aluminum oxide from the program.

In the meantime, however, Italian industry has urged the Italian standardization association to request the International Organization for Standardization that the subject be entrusted to whatever other ISO committee would be competent to handle it. The Italians expressed the feeling that several other countries also are interested in the development of standardized methods for the chemical analysis of aluminum oxide because such standards would facilitate international trade in this product.

The methods of analysis proposed by the Italians for standardization include: H_2O content (humidity); loss from calcination; SiO_2 content; Fe_2O_3 content; Na_2O (total and soluble) content; CaO content; TiO_2 content; physical properties; P_2O_5 content; V_2O_5 content; and ZnO content.

The questions to be answered by the various member countries of the International Organization for Standardization, including the U. S., are these: Do you agree that the question be studied by ISO? Do you agree to the proposed scope? Which ISO committee should handle the project? If the project is taken up by a technical committee, will you participate in the work?

If five of the 40 member-bodies of the International Organization

for Standardization are willing to participate, a project is authorized. Standards developed by the international organization are not mandatory — they are merely recommendations to member countries.

Any group interested in the subject matter is invited to communicate with the American Standards Association. ASA has been asked to submit the American viewpoint by March 14.

• FOR THE FIRST TIME, standards developed in Switzerland with reference to watchmaking are to be made generally available. According to news from the Association Suisse de Normalisation (the Swiss national standards association) a permanent office for standardization work was opened in Neuchâtel December 1, 1958 by the "Commission des organisation horlogères." Charged with the responsibility of establishing new standards for watchmaking, the commission will first develop standard dimensions used by the watchmaking industry, including dimensions for the elements of watches, such as jewels, screws and bolts, cases, dials, and watch hands. At the same time, the office is expected to develop a numbering system for classification of the new standards.

When these Swiss standards are published, copies will be forwarded by the Swiss national standards association to the American Standards Association. The titles will be included in the list of new standards received from other countries, published each month in THE MAGAZINE OF STANDARDS.

• THE EIGHTH ANNUAL MEETING of the Standards Engineers Society will take place in Boston's Hotel Somerset September 21 and 22. Arnold M. Rosenwald, SES Boston Section chairman, has announced that the central theme for the meeting will be based on the aspects of philosophy, research, education, and management in the standards field.

An 18th Century American motif is being used in the typography and art displays for the meeting's public relations effort. These materials are designed to reflect Boston's "cradle of liberty" role during the American war for independence. The motif symbolizes the emergence of standards as a potent force for better management and a better world.

• F. G. SANDSTROM, chairman of the subgroup in charge of preparing the Distribution Section of the American Standard Code for Pressure Piping, has been honored for his work on the standard. He has just received the Distribution Achievement Award of the American Gas Association's Operating Section. Mr Sandstrom is division engineer of the Consolidated Edison Company, New York. He has been chairman of the Distribution Subgroup of Subcommittee 8, ASA Sectional Committee B31, since 1951. He received the AGA award for his work as chairman, reviewing and making recommendations, in record time, on proposed revisions to the American Standard on Gas Transmission and Distribution Piping Systems, B31.1.8-1955 (Section 8 of the Code for Pressure Piping, B31.1-1955). The new edition was approved in November 1958 as American Standard B31.1.8-1958. The American Society of Mechanical Engineers, sponsor for the project, expects that published copies of the new edition will be available in February or March.

• RECENTLY ELECTED TREASURER by the International Organization for Standardization, Jacques de Saugy will serve for three years, from January 1959 to December 31, 1961. Mr de Saugy, a graduate engineer of the Federal Polytechnical School (Switzerland), is commercial director of the Societie Genevoise d'Instruments de Physique in Geneva.

• SEVENTY-TWO SESSIONS will cover almost every phase of accident prevention during New York's 29th annual Safety Convention and Exposition April 13-17. The American Standards Association is one of the agencies cooperating with the Greater New York Safety Council, the convention's sponsor, in this annual effort to reduce the accident toll of 95,000 deaths per year, 100 times as many disabling injuries, and economic loss estimated at more than $11,000,000,000. Henry G. Lamb, safety engineer, American Standards Association, is general vice-chairman of the 1959 convention.

New developments in safety devices, protective equipment, occupational and driver-testing devices, and other aids to accident prevention will be displayed at the Exposition, to be held in conjunction with the convention.

During the convention period, New York City will officially observe

J. M. Goldsmith

D. F. Hollingsworth

CHAIRMAN AND VICE-CHAIRMAN of the Company Member Conference for 1959: J. M. Goldsmith, Armco Steel Corporation, Kansas City, Mo. left; D. F. Hollingsworth, E. I. duPont de Nemours & Company, Wilmington, Delaware, right. The CMC's Administrative Committee met January 20 to complete plans for the Spring Meeting of the Conference, to be held May 6 and 7, at the President Hotel, Kansas City, Mo. The first day and half of the second will be devoted to technical sessions. The last half day will be devoted to plant tours.

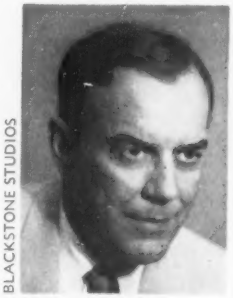
"Greater Safety Week" in welcome to the accident prevention workers and to emphasize the responsibility of the individual for his own safety and that of others.

• NEW MEMBER of the Standards Council representing the Telephone Group is F. D. Reese, engineering director of the General Telephone Service Corporation. A graduate of Cornell University, Mr Reese is a licensed professional engineer in

F. D. Reese

Pennsylvania and a member of the American Institute of Electrical Engineers. He worked for the General Telephone Company of Pennsylvania from the time of his graduation, rising to chief engineer in 1952, until he joined the General Telephone Service Corporation as engineering director in August 1957. For three years, September 1942 to December 1945, he served in the Army Signal Corps in an affiliated unit sponsored by the General Telephone Company of Pennsylvania.

• ALFRED W. SAWYER, partner in the engineering firm of Hazen and Sawyer, New York, has been named to represent the American Society of Civil Engineers on ASA's Standards Council. Mr Sawyer had been assistant and associate engineer with Malcolm Pirnie and Malcolm Pirnie Engineers from 1935 to 1951 when he and Mr Hazen formed their partnership. He is at present working on the design of a 200-million gallon per day addition to Detroit's Springwells filtration plant, as well as on the functional design of the proposed 160-million gallon per day Wayne County water plant, and major enlargement of two sewage treatment plants and water supply



Alfred W. Sawyer

works in Greensboro, North Carolina. He is also working on waste treatment facilities for two paper mills and several new water supply projects in New York.

Mr Sawyer holds a B.S. in Civil Engineering, and an M.S. in Sanitary Engineering from Harvard Engineering School, and is a licensed professional engineer in a number of states in addition to New York, Connecticut, and New Jersey. He is a member of the American Society of Civil Engineers, the American Water Works Association, the American Institute of Consulting Engineers, National Water Conservation Conference, and the American Sanitary Engineering Intersociety Board, Inc.

• MEMBERS of the Board of Review, who act on behalf of the Standards Council on noncontroversial matters, have been elected for 1959. They are:

Hendley Blackmon, Westinghouse Electric Corporation, Pittsburgh, Pa.

J. S. Fassett, director, Service Department, American Hotel Association, New York, N. Y.

Karl L. Ghaster, Jr, general manager, Outdoor Advertising Association of America, Chicago, Ill.

E. R. Granniss, manager, Loss Prevention and Engineering Department, Royal-Liverpool Insurance Group, New York, N. Y.

C. M. Heinen, Materials Laboratories, Engineering Division, Chrysler Corporation, Highland Park, Mich.

Perry L. Houser, president, Metal Cutting Tool Institute, New York, N. Y.

C. W. Franklin, Consolidated Edison Company of New York, Inc, New York, N. Y. (*Alternate*)

• AN EXTENSIVE PROGRAM of international standardization in the field of commercial refrigeration, with U. S. participation, was launched late last year.

According to a report which has just become available, Technical Committee 86, Refrigeration, of the International Organization for Standardization (ISO), at a meeting in London, England, last September, established its objectives and organized one working group and six subcommittees to carry out the work.

The United States has accepted the administrative secretariat for Working Group 1, Designation of Refrigerants, and of Subcommittee 6, Testing of Factory-Assembled Airconditioning Units.

The other subcommittees formed are: Safety (Secretariat, Germany); Terminology, Definitions, and Symbols (Italy); Testing of Refrigerating Systems (Belgium); Testing of Refrigerant Compressors (United Kingdom); and Construction and Testing of Household Refrigerators (France).

• A REVISION of the American Standard Methods for Testing Photographic Enlargers has been published by the American Standards Association. Designated PH3.-31-1958, the revision supersedes American Standard Z38.7.6-1950.

The publication describes standard methods for testing photographic enlargers for amateur and professional use in ordinary photographic practice.

The basic tests include uniformity of illumination; light tightness; effectiveness of safety filter; resolving power and color correction of lens; alignment of optical axis, negative and easel; temperature; and absence of scratches on negatives.

As compared to the earlier edition, the revision includes changes to bring the standard up to date with other American Standards in the photographic field and provides temperature tests for color enlargers.

Copies of American Standard PH3.31-1958 are available at 50 cents each.

PUBLISHED AMERICAN STANDARDS

If your company is a member of the American Standards Association, you are entitled to receive membership service copies of these newly published American Standards. Find out who your ASA contact is in your company. Order your American Standards through him. He will make sure your company receives the membership service to which it is entitled.

ELECTRIC AND ELECTRONIC

Distribution, Power, and Regulating Transformers, and Reactors Other Than Current-Limiting Reactors, Requirements, Terminology, and Test Code for, C57.12-1958 (Revision of C57-12-1956, including supplements C57.12c-1957, C57.12d-1957)

General, C57.12.00-1958 $2.00

Transformers, 67,000 Volts and Below, 501 Through 10,000 kva, 3 Phase; 501 Through 5000 kva, 1 Phase, C57.12.10-1958 $1.50

Overhead-Type Distribution Transformers, 67,000 Volts and Below, 500 kva and Smaller, C57.12.20-1958 $2.20

Three - Phase Load - Tap - Changing Transformers, 67,000 Volts and Below, 1000 kva Through 10,000 kva, C57.12.30-1958 $1.50

Terminology, C57.12.80-1958 $1.00

Test Code, C57.12.90-1958 $2.20

Brought up to date and now published in six sections to facilitate and speed up future revisions. The whole standard, previously published in one volume, need not be republished when certain sections are changed.

Sponsor: Electrical Standards Board

GAS-BURNING APPLIANCES

Addenda (Z21.13.3b-1958) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume III, Gravity and Fan Type Floor Furnaces, Z21.13.3-1956, Z21.13.3a-1957 $0.50

Test methods and minimum limiting requirements to ensure safe operation, durable construction, and acceptable performance for central heating gas appliances as applicable to gravity and fan type floor furnaces.

Domestic Gas Conversion Burners, Listing Requirements for, Z21.17-1958 (Revision of Z21.17-1948) $2.00

Test methods and minimum limiting requirements to ensure safe operation, durable construction, and acceptable performance for domestic gas conversion burners.

Sponsor: American Gas Association

MECHANICAL

Lock Washers, B27.1-1958 (Revision of B27.1-1950) $2.00

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

PETROLEUM PRODUCTS AND LUBRICANTS

Flash Point by Pensky-Martens Closed Tester, Tentative Method of Test for, ASTM D 93-58T; ASA Z11.7-1958 (Revision of ASTM D 93-52; ASA Z11.7-1952) $0.30

Sponsor: American Society for Testing Materials

PHOTOGRAPHY

Photographic Filter Sizes, Specification for, PH3.17-1958 $0.35

Applies only to physical dimensions of photographic filters, either mounted or unmounted. It is applicable to all types of filters, including solid glass, plastic between glass, and gelatin water filters.

Apertures and Related Quantities Pertaining to Photographic Lenses, Methods of Designating and Measuring, PH3.29-1958 (Revision of Z38.4.20-1948) $0.35

Defines the clear aperture, effective aperture, aperture ratio, relative apertures, f/number, and T number; and gives methods for their measurement or determination.

Sponsor: Photographic Standards Board

AMERICAN STANDARDS UNDER WAY

Status as of January 19, 1958

Legend — Standards Council — *Approval by Standards Council is final approval as American Standard; usually requires 4 weeks.* Board of Review — *Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.* Standards Board — *Approves standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.*

ACOUSTICS, VIBRATION, AND MECHANICAL SHOCK

In Standards Board

Magnetic Recording Instruments for the Home—Wire Size, Speed, Spools, Z57.-4-

Sponsor: Institute of Radio Engineers

CHEMICAL INDUSTRY

American Standards Approved

Common Name for the Pest Control Chemical 3,5-dinitro-*o*-toluamide; zoalene, K62.19-1959

Common Name for the Pest Control Chemical *n*-dodecylguanidine acetate: dodine, K62.21-1959

Common Name for the Pest Control Chemical *O-O*-diethyl *S*-(ethylthio) methyl phosphorodithioate: phorate, K62.22-1959

Sponsor: U. S. Department of Agriculture

DRAWINGS, SYMBOLS, AND ABBREVIATIONS

In Standards Board

American Drafting Standards Manual, Section 10, Metal Stampings, Y14.10-Section 17, Fluid Power Diagrams, Y14.17-

Sponsors: American Society of Mechanical Engineers; American Society for Engineering Education

ELECTRIC AND ELECTRONIC

American Standards Approved

Automatic Circuit Reclosers and Line Sectionalizers, Requirements for, C37.-22-1959

Sponsor: Electrical Standards Board

Solid Dielectric Transmission Lines, C83.21-1958

Sponsor: Electronic Industries Association

In Board of Review

Armored Cable, Safety Standard for, C33.9- (7th ed. of UL 4)

Sponsor: Underwriters' Laboratories

MECHANICAL

American Standards Approved

Instrument Precision Ball Bearings, Requirements for, B3.10-1959

Evaluating Static and Dynamic Load Ratings for Ball and Roller Bearings, Method of, B3.11-1959

Sponsor: Anti-Friction Bearing Manufacturers Association

MISCELLANEOUS

In Standards Board

Nursery Stock, Z60.1- and addendum Z60.1a-1955 (Revision of Z60.1-1952)

Sponsor: American Association of Nurserymen, Inc

Reaffirmation Approved

Gray Finishes for Industrial Apparatus and Equipment, Z55.1-1950 (R1958)

Sponsor: Mechanical Standards Board

PHOTOGRAPHY

American Standard Approved

Diffuse Transmission Density, PH2.19-1959 (Revision of Z38.2.5-1946)

Sponsor: Photographic Standards Board

Reaffirmation Being Considered

Designation of Emulsion Side of Photographic Sheet Films, PH1.19-1944

Sponsor: Photographic Standards Board

PIPE AND FITTINGS

American Standard Approved

Welded and Seamless Steel Pipe, Specifications for, ASTM A 53-58T; ASA B36.1-1959 (Revision of ASTM A 53-55T; ASA B36.1-1956)

Sponsors: American Society for Testing Materials; American Society of Mechanical Engineers

SAFETY

American Standard Approved

Safety Code for Portable Wood Ladders, A14.1-1959 (Revision of A14.1-1952)

Sponsors: American Society of Safety Engineers; National Association of Mutual Casualty Companies; American Ladder Institute

In Board of Review

Safety Code for the Installation and Operation of Pulverized-Fuel Systems, Z12.-1- [Revision of Z12.1-1957 (2nd ed.)]

Safety Code for the Prevention of Dust Explosions in Starch Factories, Z12.2- (Revision of Z12.2-1957)

Safety Code for Pulverizing Systems for Sugar and Cocoa, Z12.6- (Revision of Z12.6-1953)

Safety Code for the Prevention of Dust Explosions in Coal Preparation Plants, Z12.7- (Revision of Z12.7-1953)

Sponsor: National Fire Protection Association

Reaffirmation Approved

Safety Code for Forging and Hot Metal Stamping, B24.1-1952 (R1959)

Sponsors: Drop Forging Association; National Safety Council, Inc

TEXTILES

In Standards Board

Cotton Yarns, Methods of Testing and Tolerances for, ASTM D 180-57T; ASA L14.13- (Revision of ASTM D 180-54T; ASA L14.13-1956)

Sewing Threads, Methods of Testing, ASTM D 204-57T; ASA L14.14- (Revision of ASTM D 204-42; ASA L14.-14-1959)

Man-Made Staple Fibers, Methods of Testing, ASTM D 540-57T; ASA L14.-33- (Revision of ASTM D 540-44; ASA L14.33-1949)

Felt, Methods of Testing, ASTM D 461-57T; ASA L14.52- (Revision of ASTM D 461-53; ASA L14.52-1955)

Spun and Filament Yarns Made Wholly or in Part of Man-Made Organic Base Fibers, Methods of Testing, ASTM D 1380-57T; ASA L14.90- (Revision of ASTM D 1380-56T; ASA L14.90-1957)

Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

WHAT'S NEW ON AMERICAN STANDARDS PROJECTS

THE SUBCOMMITTEE on interference fits at its Cleveland meeting:—FRONT ROW (l to r). I. Fullmer, National Bureau of Standards; M. Schultheis, Hughes Aircraft; W. Waltermire, Lamson & Sessions, chairman; Frank Kocian, International Harvester. SECOND ROW, Jack Venema, Ford Motor; Glenn Stimson, Greenfield Tap & Die; Roy Trowbridge, General Motors Engineering Standards; Spencer Terry, Pipe Machinery; Francis Calkins, Wright Field; Walter Brown, Alco Products; Frank Philippbar, ASME. BACK ROW, William Hayes, Pipe Machinery; Andy Robertson, Sheffield Steel; Richard Belford, Industrial Fasteners Institute; Louis Oest, Parker-Kalon Corp; Joe Briger, Alco Products; Bob Kennedy, General Motors, Euclid Division; S. W. Taylor, ASA; Robert Zuppert, Oliver Corp; Richard McGee, General Motors, Euclid Division.

Standardization and Unification of Screw Threads, B1—

Sponsors: The American Society of Mechanical Engineers; Society of Automotive Engineers

Under the chairmanship of W. G. Waltermire, chief product engineer, The Lamson & Sessions Co, the subcommittee on interference fits met on December 19 at the Lamson & Sessions plant in Cleveland. Mr Waltermire reviewed in general the research and tests which had been conducted in order to develop the present draft on Class 5 Interference Fit Threads. Four of the five members who had cast negative ballots in the 1958 voting were present and changed their votes to affirmative after thorough discussion and necessary changes. The remaining negative ballot was likewise rescinded when the action taken at the meeting was explained to the member who had cast it. The draft is now being printed and circulated. It is proposed to have industry use the draft standard for some time before it is submitted for approval as American Standard. This is considered advisable in order to further substantiate the experiments which had been conducted in the development of this Class 5 fit thread and to get wider experience on sizes and materials.

Small Tools and Machine Tool Elements, B5—

Sponsors: American Society of Tool Engineers; Metal Cutting Tool Institute; Society of Automotive Engineers; National Machine Tool Builders' Association; The American Society of Mechanical Engineers

A proposed revision of American Standard Machine Tapers, B5.10-1953, is now being circulated for criticism and comment. The standard is intended to serve as a guide for future designing of machines and related equipment that utilize tapers within the ranges specified in the

various tables. It establishes American standard practice for the slope of self-holding and steep machine tapers, the detailed dimensions of taper tool shanks, and the corresponding dimensions for the taper socket in the spindle of the machine. Ring and plug gages and their tolerances are also covered.

An appendix includes data on Brown & Sharpe, Morse, Stub-Morse, and Jarno tapers. This information is presented solely as an aid to industry.

Those interested may obtain copies of the tentative draft free of charge by writing, on their letterhead, to Frank Philippbar, Standards Department, The American Society of Mechanical Engineers, 29 West 39 Street, New York 18, N. Y.

Dimensional Standardization of Bolts, Nuts, Rivets, Screws, and Similar Fasteners, B18—

Sponsors: The American Society of Mechanical Engineers; Society of Automotive Engineers

H. F. Phipard has been appointed chairman of Subcommittee 3 on Slotted and Recessed Head Screws, of Sectional Committee B18. Mr Phipard of Continental Screw Company has long been active as a member of Subcommittee 3 and various of its subgroups.

The resignation of Frank P. Tisch as chairman of Subcommittee 3 was received with deep regret, the sponsors announced. Mr Tisch has given long and effective service as chairman, not only in developing the American Standard on Slotted and Recessed Head Screws, B18.6-1947, but during the long and difficult expansion and development of that standard into four separate product standards. Three of these have been approved by ASA as American Standards and the fourth is shortly to go to the sponsors for approval.

The ever-changing nature of the engineering standards field is pointed up by the fact that the chief subject on the agenda of the meeting was the proposed revision of American Standard Tapping Screws, which had been approved as American Standard in 1958.

Electrical Insulating Materials, C59—

Sponsor: American Society for Testing Materials

Three Military Specifications, submitted to ASA for approval as American Standard, are being voted on by Committee C59. They are: MIL-V-173A, Varnish, Moisture- and Fungus-Resistant, for the Treatment of Communications, Electronic, and Associated Electrical Equipment; MIL-I-2707, Insulation, Electrical, Liquid, Impregnating, High-Temperature; and MIL-V-1137A, Varnish, Electrical Insulating (for Electro-Motive Equipment).

O. C. Rutledge

Brushes for Electrical Machines, C64—

Sponsor: National Electrical Manufacturers Association

O. C. Rutledge has been named chairman of committee C64. Mr Rutledge is manager of the Carbon Products Engineering Sub-Section, Large Motor and Generator Department, General Electric Company. A graduate of Yale with a Master of Science in Electrical Engineering, Mr Rutledge has worked with General Electric since 1933. For the past 12 years he has been manager of the Carbon Products Engineering Sub-Section. During this time he has been active on carbon brush standards work in the carbon section's technical committee of the National Electrical Manufacturers Association and the Joint AIEE-NEMA Committee on Test Code for Carbon Brushes. He is a member of the Schenectady Chamber of Commerce and chairman of the Chamber's Street and Highway Committee. A member of the Yale Alumni Board, he is district vice-president of the Yale Engineering Association.

Sectional Committee C64 is concerned with definitions, dimensions, and tolerances for carbon, graphite, and metal graphite brushes and brush elements. The committee has, thus far, approved one American Standard, C64.1-1956 (NEMA CB1-1956), American Standard Requirements for Brushes for Electrical Machines (Carbon, Carbon-Graphite, Electrographitic, Graphite, and Metal-Graphite Brushes).

Dental Radiographic (X-ray) Film, PH6—

Sponsor: American Dental Association

This new project, approved December 16, 1958, by the Photographic Standards Board, was recommended by a general conference of producers and users held under ASA auspices last November. The scope of the work will cover "nomenclature, standards, and specifications for dental radiographic film, including sizes and methods of designation."

Drawing and Drafting Practice, Y14—

Sponsors: The American Society of Mechanical Engineers; American Society for Engineering Education

Optical drawings will be the subject of a new subcommittee being organized by committee Y14 in cooperation with Sectional Committee PH3 on photographic apparatus. This brings to 18 the number of subcommittees working under Y14 on the development of the American Standard Drafting Manual.

Semiconductor Electron Devices—

Shall a project on semiconductor electron devices, such as transistors, be initiated by ASA, and a sectional committee be organized to handle the work? This question is now being considered by the Communications and Electronics Division of the Electrical Standards Board. Request for the proposed project was presented by the Semiconductor Device Council of the Joint Electron Device Engineering Council, which indicated its willingness to serve as sponsor. The scope proposed for the project covers: "Definitions, classifications, methods of rating

and testing, dimensions, and interchangeability of semiconductor electron devices."

Through the Semiconductor Device Council, the National Electrical Manufacturers Association and the Electronic Industries Association have already been at work on standards for these relatively new electron devices. The proposed ASA project now being considered would bring other organizations concerned into the work on a nationwide basis.

Building Code Requirements for One- and Two-Family Homes—

No consensus in favor of this proposed project was found by the Construction Standards Board as the result of a vote taken on the proposal by organizations represented at a general conference. Representatives of 89 organizations interested in home building attended the conference. The final balloting showed 29 yes, 24 no, 21 not voting, and no votes received from 15. From its examination of the ballot and of the conference minutes, the Board turned down the request for initiation of the project. The Board, however, recognized the fact that "thousands of communities in the United States either have not adopted currently available building codes or are using codes that are outdated or critically inadequate." Under its constitution, ASA can initiate a standards project only when such action is supported by a consensus of the group substantially concerned with the subject matter. The main opposition to the proposed project came from three of the code-writing bodies — Building Officials Conference of America, International Conference of Building Officials, Southern Building Congress—and from some of the leading building materials industries.

ASA was requested to initiate the project by publisher Henry R. Luce, on behalf of 14 national organizations concerned with home building. The request was based on the findings of an industry round-table conference held under the auspices of the Luce publication, *House and Home*.

by **Cyril Ainsworth**

DINNSA

(Does Industry Need a National Standards Agency?)

THIS COLUMN, to date, has discussed the objectives of the American Standards Association as outlined in the constitution. Attention can now be given to procedural fundamentals. Some are covered in ASA's by-laws, but all are covered very fully in the procedure established by the Standards Council. For the next several months, these fundamentals will be outlined, to give a more accurate understanding of ASA operations.

It may be difficult to understand that ASA procedure is really very simple. Yes — the text which describes it is several pages long and its language is somewhat formal and involved in places. The approval and development requirements seem mixed together. It is not uncommon in meetings to hear the procedure referred to as ASA's red tape.

Actually, the fundamentals of ASA procedure are neatly wrapped up in a package of only one paragraph — paragraph 101. If all the rest of the procedure were to be thrown away, ASA could function in the approval of standards. It would not have all the guides it now has but it could perform its assigned tasks. This paragraph follows:

"A national standard implies a consensus of those substantially concerned with its scope and provisions. An important function of the American Standards Association is the judicial one of determining whether a national consensus has been reached. To provide flexibility in meeting the variety of conditions which obtain in standardization work, several alternative methods are provided. The basic test to be applied in all cases is the fact of the assent, affirmatively expressed, of the groups having substantial concern with the standard. Such groups have an inherent right to representation on the body dealing with the subject matter of the standard, but it is not essential that this right be exercised."

In those few words rest the fundamentals of ASA approval operations. This and succeeding monthly columns will examine this paragraph, sentence by sentence, to bring the fundamentals fully into view.

The first sentence sets forth the principle that any standard, no matter where or under what auspices it is developed, takes on national significance if evidence is provided to show that it is supported by a consensus of those substantially concerned with its scope and provisions. In other words, a standard to be national in scope and acceptance does not have to be developed at the national level through the use of ASA procedures. It may be a standard of a technical society, trade association, or other organization which, by its use and acceptance by others substantially concerned, takes on national significance. While ASA approval is not absolutely necessary for a standard to be recognized as a national standard, ASA approval confirms that a consensus does exist and that the standard deserves to be recognized as truly national in scope and influence. ASA approval provides the designation "American Standard" to indicate to all concerned the national recognition that the standard has received.

The process by which ASA determines the existence of a consensus will be outlined next month through an analysis of the second sentence.

REPLACING WORN-OUT TOOLS?

here are dimensions, tolerances, terminology

—worked out by the nation's widely repre-

sentative authority on tools, Committee B5.

Approved as AMERICAN STANDARD

A. Devaney

Check these up-to-date American Standards for details you need—

Twist Drills, B5.12-1958 $2.00

Besides the nomenclature, definitions, and sizes and tolerances of two flute straight and tape shank twist drills which were covered in the previous edition of this standard, the revision includes combined drills and countersinks, selected sizes of millimeter drills, screw machine length drills, jobbers length and taper length drills, and an appendix listing drills by decimal size.

Machine Pins, B5.20-1958 $1.00

Dowel, taper, clevis, grooved, and cotter pins. Tables for grooved pins, widely used in the automotive industry, are new; also dimensions for under head to hole and end of pin, hole size tolerance, drill sizes for clevis pins, and chisel points for cotter pin and styles; and chamfer values and tolerances on straight pins and unhardened ground dowel pins.

Inserted Blade Milling Cutter Bodies, B5.23-1958 $1.50

Principal dimensions and tolerances which affect interchangeability of inserted blade-type milling cutters, in the diameter range of 3 to 24 inches.

Mounting Dimensions of Lubricating and Coolant Pumps for Machine Tools, B5.28-1958 $1.00

Establishes the principal dimensions affecting interchangeability of foot-mounted, bracket-mounted, and motor-mounted lubricating and coolant pumps on machine tools.

Knurling, B5.30-1958 $1.50

Knurling tools with standardized diametral pitches, applicable both to general purpose and precision knurling. Includes dimensional relations with stock in the production of straight, diagonal, and diamond knurling on cylindrical surfaces which have teeth of uniform pitch parallel to the axis of the cylinder or at a helix angle not exceeding 45 degrees with the axis of work. Tooth depths for diagonal knurls have been added.

Carbide Blanks and Cutting Tools, B5.36-1957 $2.00

The designations, shapes, and dimensional specifications of eight styles of sintered carbide blanks; tipped tools with square or rectangular shanks; boring tools, tipped and solid, round and square, and unshaped tool bits; and inserts 1½ inches long, and their holders.

Driving and Spindle Ends for Portable Air and Electric Tools, B5.38-1958 $1.50

Dimensions and tolerances for both driving and driven elements of portable power tools of either the air or electric type. Percussion tools are not included. Threaded spindles for geared chucks and abrasion tools, Jacobs tapers, and hexagonal and square drives are covered.

Soon to be completed—Two new standards on high speed steel and cast nonferrous single-point tools and tool holders, and accuracy of vertical drill presses. Six revised standards, Milling cutters, B5.1; Taps, cut and ground threads, B5.4; Machine tapers, B5.10; Reamers, B5.14; Drill drivers, B5.27. One reaffirmation, Chucks and chuck jaws, B5.8.

Sectional Committee B5 is sponsored by The American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers; American Society of Tool Engineers.

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